THE BEGINNINGS OF THE EGYPTIAN STYLE OF ARCHITECTURE.

By Professor Sir Martin Conway.

Read before the Royal Institute of British Architects, Monday, 18th May 1903.

PROFESSOR FLINDERS PETRIE, in an epoch-making Paper read before the Royal Institute of British Architects, 20th May 1901, and in other Papers, has described the building methods of the prehistoric and early dynastic Egyptians, incidentally pointing out certain forms and features which took definite place and endured in what we recognise as the Egyptian style. It is unnecessary here to define the Egyptian style, because it is the most easily recognised in the world. Even the proverbial schoolboy knows it when he sees it. That style appears to have arisen about the time of the Fourth Dynasty, and to have rapidly developed during the Fifth. The elements of which it was composed, or from which it was derived, existed earlier, but not till the Fourth Dynasty were they definitely compounded into an architectural style applicable, and thenceforth continually applied, to buildings in stone. It is to the origin and growth of that style of stone architecture that I wish now to direct your attention.

The testimony of the hieroglyphs, and of actual remains, proves that the prehistoric and early dynastic Egyptians used Nile mud as their chief building material. They either made it into bricks, or they used it with a stiffening of reeds for supports, or plastered it on to a lattice-work of reeds or palm-fronds for walls. Until recently it was commonly believed that the early dynastic Egyptians likewise employed wood for small or costly edifices. Perrot and Chipiez devote a learned chapter to the reconstruction of examples of this supposed wooden architecture, basing their conclusions upon certain sarcophagi made in the likeness of palaces, and upon representations of architectural features in tombs. In fact, however, as Mons. Foucart was, I believe, the first to point out, no such Egyptian wooden architecture ever existed. *Primâ facie*, in an almost woodless country like Egypt, wooden architecture was not to be looked for; though it should be remembered that 5,000 years before Christ more timber may have grown along the banks of the Nile than grows there to-day, thanks to the activity of man. The pictures and models in question, however, did look like representations of wooden structures.* Take, for instance, a series of details from wall-paintings in tombs of the Fifth and Sixth Dynasties, reproduced from

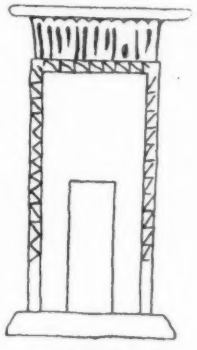

FIG. 1.—HIEROGLYPH REPRESENTING A SHRINE.

* Professor Petrie has called attention to a delicate ivory model in the Louvre representing the façade of a building. An illustration of it, as completed by him, will be found in the Paper above referred to. The line of very thick columns below seems to me to stand for a line of plastered reed columns. The band that ties them together can be clearly seen below the capitals. The light upper part of the façade may have consisted, to a considerable

Lepsius and Prisse d'Avennes, and conveniently grouped together by Perrot and Chipiez (vol. ii. pp. 86–89). The slender columns there depicted look even more like metal than wood. It must, however, be remembered that unpractised architectural draughtsmen, even though they be for their day able artists, invariably represent columns with exaggerated slenderness. I quote in illustration Giotto's painting of the façade of the Temple of Minerva at Assisi, which occurs in one of his frescoes in the upper church. The actual façade still exists, and the columns of the portico are of perfectly normal type; yet in Giotto's picture they are made impossibly slender. Parallel examples from the wall-paintings of Roman Italy might be

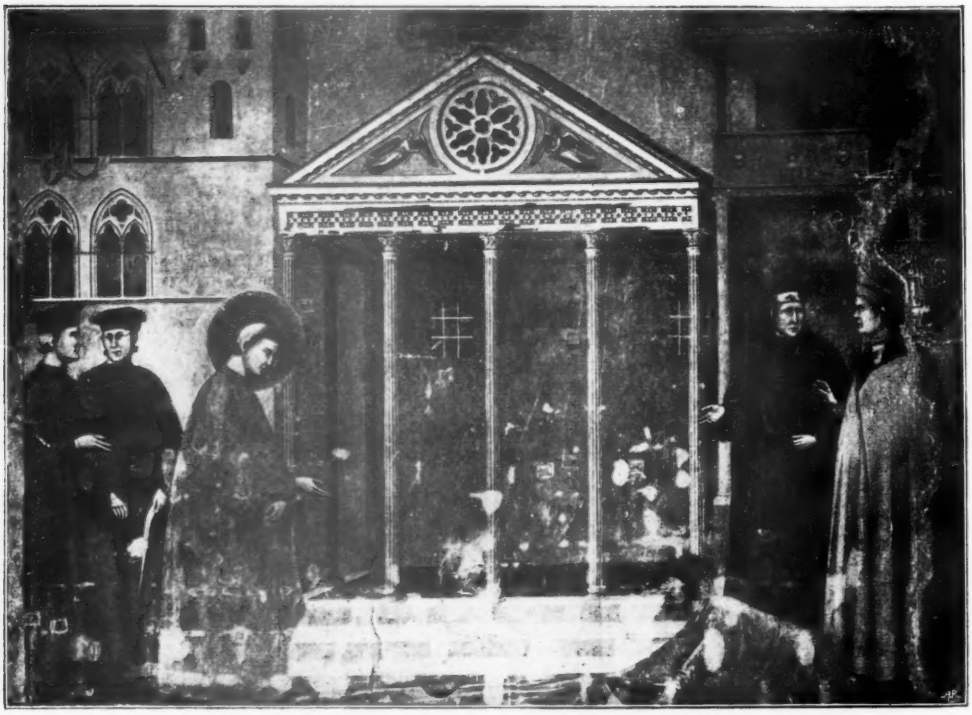

FIG. 2.—TEMPLE OF MINERVA AT ASSISI AS DEPICTED BY GIOTTO.

quoted by scores.* As a further example of the same tendency early pictures of mountains may be cited. Before the days of photography every peak was depicted as a needle.

That supports of normal proportions should thus be represented by early Egyptian draughtsmen abnormally slender is not surprising, but was to be expected. The columns in their pictures must be greatly amplified in breadth if they are to be translated into structural reality. Those that represent tent-poles and the octagonal or sixteen-sided columns of the hieroglyphs were originally of wood. The rest were of reed-bundles plastered over with mud, such as the fellahin of to-day so freely employ as supports. Both kinds

extent, of wood, but the concentration of architectural features into a small area and the omission of parts not easily represented on a small scale may have altered the aspect and obscured the meaning of the whole. But for the discovery of the Naqada tomb we should not have been able to interpret the sarcophagus of Menkaura.

* Vide Woltmann's *History of Painting*, fig. 32.

had been copied into stone at the date of the pictures we are referring to, and those pictures may actually depict stone buildings, little though they suggest that material.

The sarcophagi that are carved in stone like miniature houses are easily interpretable in the light of modern discoveries. Since the tomb at Naqada was laid bare, and its connexion with Mena or perhaps his wife demonstrated, a new light has been thrown on the palace architecture of the earliest dynasties. Externally that tomb was a model of a contemporary palace. The sarcophagi were smaller models of the same type of building. The characteristic feature in all is the series of niches into which the whole exterior surface is broken up. We fortunately possess materials for the detailed reconstruction of, at all events, part of a palace façade of the Fifth Dynasty, which, so far as the general type is concerned, does not differ from the façade of the Naqada tomb. It must be remembered that the purpose of an ancient Egyptian tomb and of its furniture and decoration was to supply the ghost of the dead proprietor with possessions and a position similar to those he had enjoyed in life. If he had lived in a palace his tomb had to be a palace in miniature. If he had in life enjoyed access to the royal palace, such access had to be provided for him by his tomb. Every normal fully equipped tomb of the old Empire contained what is known as a false door through which the ghost was supposed to be able to pass and repass from the ghostly world; but some tombs have two such pictured or sculptured doors, one much more elaborate than the other. Tombs containing the second elaborate door are found to belong to members of the royal family or the very highest officials who had access to the king. The elaborate doors, in fact, depict the entrance to the palace. In the tomb of Ptah-hotep at Sakkara we find a well-preserved example of this class. Beyond all question it represents a portion of the palace façade. Over the doors of some of these representations the name "Mena" is inscribed, and it has been suggested that the palace in every case is supposed to be the palace of Mena himself. At all events, it was clearly a building of the same kind as that which the Naqada tomb represents, and which is reproduced on a smaller scale by such a sarcophagus as Khufu-ankh's. If we had only the Ptah-hotep painting to guide us we might well imagine, with Perrot and Chipiez, that the original building was of wood; but with the Naqada tomb before us we can see that it must have been of crude brick, with the surface elaborately and perhaps tastefully painted. Wood was used in these buildings to frame openings and support ceilings, but it was not an important architectural feature.

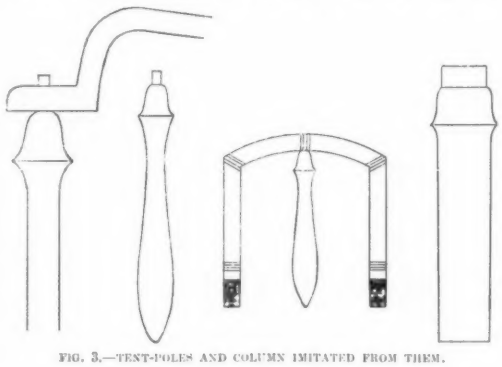

FIG. 3.—TENT-POLES AND COLUMN IMITATED FROM THEM.

Thus we have evidence that the palaces and doubtless most other buildings of the early dynastic period were built of crude brick, and that the architecture of that time was an architecture of mud and reeds, not of stone, still less of wood. The characteristic feature of exteriors was the rectangular niche—niches within niches. The supports were bundles of reeds, or clustered bundles, plastered over with mud and modelled above, for capital, into the likeness of buds or flowers. It would be easy to construct imaginary restorations of such buildings, but they would not carry us further than our bare statement carries us.

Thus far then we have obtained no information whatever as to the origin of Egyptian stone-architecture. Of the beginnings of stone building Professor Petrie has already told us

the important facts. He has actually revealed a granite pavement in a chamber of the tomb of the First Dynasty king, Den, but so far was that from being an architectural feature that it was actually covered over by a layer of mud-bricks. He has further brought to light the first known chamber built of stone, which is that of King Khasekhemui, of the Second Dynasty, and those who will refer to his Paper already quoted will find his conclusive reasons for deciding that stone building was practised at that time, whilst, as he reminds us, Manetho records that the second king of the Third Dynasty "built a house of hewn stone." All this, however, is mere building, not architecture. The same statement is true of the Step-Pyramid of Sakkara, which dates from the Third Dynasty. That is built of stone, but if it ever possessed any architectural features no trace of them has survived. It contained indeed a chamber covered with glazed tiles, a decoration no doubt adopted from contemporary crude-brick buildings, which, like similar buildings in Chaldæa, would naturally be so decorated by people who knew the art of glazing; but such flat wall decoration, without division of areas or any special adaptation to the chamber, is no more an architectural feature than so much wall-paper would be. Tile decoration can, of course, be made an architectural feature—as it was in Persia—but the tile decoration of the third pyramid chamber is not in any sense architectural. The lesson of the Medum pyramid and its adjacent chapel is the same. The masonry is better; the pyramid approaches without actually reaching the developed type, but it is in no sense a work of architecture. It is a mere mountain of stones built together. The chapel which Petrie carefully excavated and wisely reburied is a most important monument for us. It is the simplest kind of stone-building conceivable, with plain walls, rounded off at the top when they do not carry a roof. There are no piers. The doorways are absolutely plain, and the whole edifice is devoid of ornamentation. The only architectural quality it could have possessed is good proportion, and that is wanting. The neighbouring mastabas are similarly destitute of architectural quality. Their false doors are inscribed with beautiful hieroglyphs, but there is no attempt to arrange them architecturally. At this date, then, the art of stone architecture had not arisen.

If we investigate the interiors of the mastabas of the Fourth Dynasty we receive a like impression. Some of them contain chambers whose roofs are supported by plain square-sectioned stone piers. These are treated as so much wall-space and inscribed like the walls, but there is no architecturally decorative intent about the division of wall-spaces or the arrangement of painted reliefs, however meritorious in themselves the latter may be. Nor are the proportions of these chambers good before the Fifth Dynasty. Practical considerations alone determined their measurements. The pyramid chapels of the day seem to have resembled Seneferu's in style or lack of style. The so-called Temple of the Sphinx is still plain and charmless. Its merit is in the technical excellence of the masonry—the wonderful way in which the hard stone employed has been shaped and the admirable fitting of its huge blocks—but that is not architecture. Possibly it may be contended that the pyramids are works of architectural art. If we consent to admit them into that category we must at the same time observe that the architectural element in them is a very minute factor, confined solely to the angle of their slope. An admirably proportioned figure was in fact arrived at, but that it was arrived at with an æsthetic end in view is very improbable. Many indications exist to lead us to the conclusion that astronomical measurements decided alike the position and the form of the great pyramids. If so, they count as works not of art but of science.

Thus far, then, down to the middle of the Fourth Dynasty, I claim that we have as yet no proof of the existence in Egypt of an art of stone architecture. The craft of building in stone had been carried to a high degree of perfection, but as yet it had developed no architectural art. Beautiful building, building whose forms and features were determined by the desire to

give pleasure to the eye, was only carried out in the old materials of mud and reeds with which the Egyptians had been familiar from the earliest prehistoric days.

What are the characteristic features of a stone building in the developed Egyptian style? The walls have an external batter, they are surrounded or edged by the torus moulding, they are crowned by the Egyptian gorge. The supports are either piers—square, octagonal, or sixteen or more sided—or clustered columns made in imitation of bundles of papyrus-stems or reeds, with a flat circular stone for base and with a capital made in imitation of a group of flowers, buds, or palm-fronds. There are porticos and halls of columns and there are dark chambers and passages. Now only the piers, the porticos, and the halls of columns can have descended in direct sequence from the early stone buildings we have thus far mentioned, and it is not to be supposed that such elements were lacking in contemporary or even prehistoric mud buildings. We may therefore safely declare that all the features and principles of Egyptian architecture were invented by the mud builders and were afterwards directly translated into stone. The outward batter of the walls of stone buildings had no meaning in stone; it was borrowed from mud-brick, borrowed because the Egyptian eye had become so habituated to the form that it was almost necessary to its satisfaction. The Egyptian gorge copies the old fringe of palm-frond tips with which mud walls once habitually terminated. The torus moulding was a translation of the bundle of reeds that protected the tender angle of termination of a mud wall. All these and every other element of Egyptian stone-architecture sprang directly out of structural members of the earlier mud style.

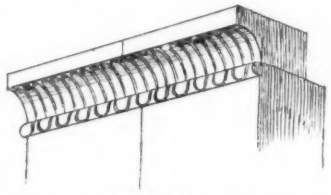

FIG. 4.—THE EGYPTIAN GORGE AND TORUS MOULDING.

The important question we have now to answer is this: When did this translation take place, and in what kind of building? The well-known sarcophagus of Khufu-ankh at Cairo throws a welcome light upon this problem. It represents a palace, apparently built of crude brick with wooden fittings. The vertical grooving along the top of the lower part was doubtless intended to represent the gorge. If at that time the gorge had actually begun to be imitated in stone as a cornice to stone buildings, the mason who carved this sarcophagus would have known better than to represent it by flat grooving. The fact that he flattened it seems to prove that, though at the time the gorge was in common use as top member of a crude brick building, it had not yet taken its place in stone building. In other words, the Egyptian stone architectural style had not begun to arise in the days of Khufu and Khafra. This conclusion is confirmed by the representation of the façade of a temple depicted in a Fourth Dynasty tomb at Abusir.* Here the walls are vertical and absolutely plain, whilst the flat roof is supported by piers terminating in a plain square abacus. Such was a stone edifice of that date.

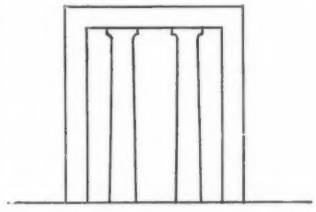

FIG. 5.—THE FAÇADE OF AN EARLY TEMPLE.

A further indication that decorated stone-architecture had not arisen may be drawn from the only Fourth Dynasty representations of stone columns that have yet been identified. They were noticed by Professor Petrie in his *Season in Egypt*, 1887 (pl. xxv.), in the tomb of Khufu's son, Khufu-Kha-f, at Gizeh. He says (p. 32), "on either side of a doorway in the inner chamber leading to the serdab is a column in low relief, represented as supporting the lintel. It has," he adds, "a well-formed base, a slight taper of the column in rising from it, an astragal at the

* Foucart, *Hist. de l'Ordre lotiforme*, p. 16, fig. 8.

top, and a spreading capital." Professor Petrie surmises that the form of these columns and capitals is directly copied, not from any existing column in wood or other material, but from a vase upon a stand which is found depicted in the same tomb between two ewers. These columns appear to be unique. We find no others like them, and none derived from the same type. They were a "sport," indicating that a development of stone-architecture was at hand, but not directly contributing to it.

The sarcophagus of Menkaura as compared with that of Khufu-ankh shows a development. Like the latter, it imitates a building, usually said to be of wood, but really of mud and reeds, or mud-brick perhaps, with wood fittings. This building is surmounted by a fully developed

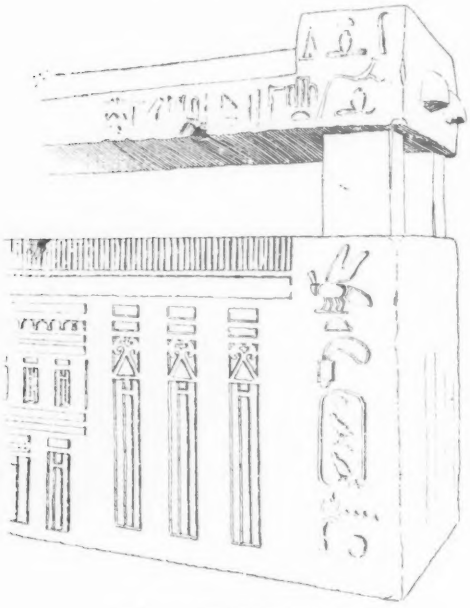

FIG. 6.—SARCOPHAGUS OF KHUFU-ANKH.

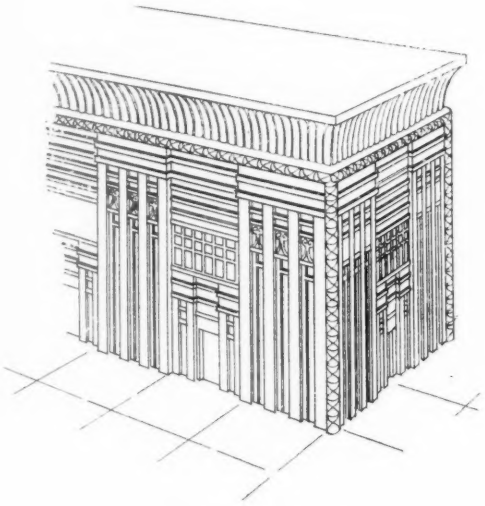

FIG. 7.—SARCOPHAGUS OF MENKAURA.

gorge cornice, whilst each façade is surrounded by a torus moulding. Here, then, is the Egyptian style completely formed. It must have sprung into existence between the days of Khufu and Menkaura.

When we come to the Fifth Dynasty, there are plenty of indications that we have reached an age of stone-architecture. The steles alone would suffice, I think, to prove it. Take almost any one of this period,* and you find it crowned with a gorge and bordered by the torus moulding. In the midst is a door, probably with decorated jambs and lintel, and with the roller on which the curtain was supposed to be rolled. Above the roller in a square frame is represented the interior of the tomb, with the Ka of the deceased receiving his necessary supplies of food and drink. Obviously, the whole is the representation of an actual edifice. Here we have two façades, one apparently of a stone building, the other a decorated façade of the Mena Palace type.

We are not, however, restricted to inference from such examples of figured architecture.

* E.g. *Perrot and Chipiez*, vol. i., fig. 120, from Lepsius.

The Fifth Dynasty has left us several actual examples of stone-architecture containing decorative features, such as a mastaba at Sakkara, figured by Mariette (*Perrot and Chipiez*, i., fig. 110), where we find the architrave of a portico decorated with a stone gorge, rather tentatively employed.

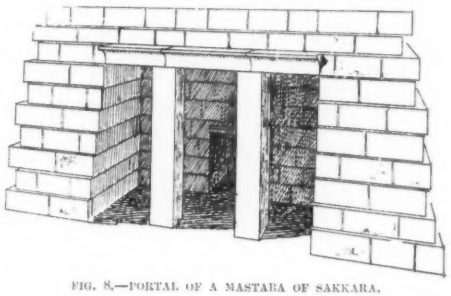

FIG. 8.—PORTAL OF A MASTABA OF SAKKARA.

In the year 1893 the tomb of Ptah-Shepses at Abusir, which dates from the beginning of the Fifth Dynasty, was excavated by the French officials of the Cairo Museum, and yielded results of the highest importance for our present enquiry. Fragments of lotiform capitals and columns were then brought to light, upon which our most careful attention must now be turned. The discoverers, it is true, did not realise the importance of their find, and did not even trouble to collect all of these invaluable fragments. Moreover, they published (*Revue Archéologique*, 1894, t. i., p. 18) a very insufficient account of the columns, accompanied by an illustration which can only be described as "criminally inaccurate." Fortunately, an accurate French savant, Mons. George Foucart, was able, after infinite trouble, to supply some of their deficiencies, and it is to him, and not to the official French heads of the Egyptian Department of Archæology, that our thanks are due for this important addition to our knowledge of the origin of the Egyptian style of architecture.*

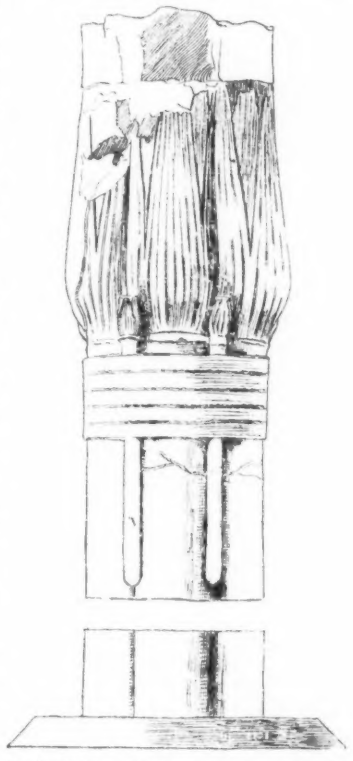

FIG. 9.—COLUMN FROM THE TOMB OF PTAH-SHEPSES AT ABUSIR.

The tomb in question was approached by a great court, which was surrounded by a colonnade of twenty square piers, whether surmounted by a gorge or not is not stated. At the end of the great court was a porch of two columns, whereof only fragments remained, and *they were not collected!* In a lateral chamber, which contained the statues of the deceased, there remained fragments of the two columns that had supported the roof. The base and lower portion of the shaft of one were in place, and enough fragments of a capital were found to enable a complete restoration to be made. These fragments were taken to Cairo. Column and capital in each case were hewn out of a single block of limestone.

The circular base is simply bevelled off at a slope of about 45°. Its diameter is large in proportion to that of the shaft. Such large bases were required when they were used instead of a foundation to spread the pressure of a shaft over an area of ground large enough to support it. These wide shallow bases remained traditional in stone-architecture down to the Middle Empire. We find them again in the tombs of Beni-Hasan,

* *Histoire de l'Ordre lotiforme*, Paris (Ernest Leroux), 1897, pp. 93 *et seq.* and figs. 41 and 42. This book is of great importance, and should be studied by all students of Egyptian architecture. See review of it by Prof. Petrie, JOURNAL R.I.B.A., Vol. IV., 3rd series, pp. 361-364.

where they have no structural reason for existence. Unfortunately no accurate section of the shaft has been published. It imitated a cluster of six bundles of reeds. Professor Petrie records that the six colonnettes are not equal in section, nor are they, as stated, elliptical. "Two wide and flattened colonnettes, back to back, are each flanked by two smaller and round colonnettes." The clustered shaft tapers slightly. Each colonnette ends in a lotus-bud, and the group of six buds forms the capital. A fivefold moulded band below the buds seems to tie the colonnettes together. The hollows between the colonnettes at the ties are filled each one with a small lotus-bud, whose stem is prolonged a short distance below the ties. All the details of the sculpture are admirably done and show a feeling for a pleasant quality of surface-form such as we find in the best, but only the best, mural bas-reliefs of this period. The calix and corolla of the flower are carefully studied from nature and admirably formalised for their function of decorative architectural members. The different layers of petals of the opening flower are indicated, and so is the characteristic veining of the petals. These details are rendered by the co-operation of sculpture and painting in harmony together, as we find them also in the tomb bas-reliefs, which are equally dependent upon relief and colour for their effect.

This column and capital from Abusir are beyond question the finest that have come down to us from ancient Egypt, as far as workmanship and carving are concerned. Of their proportions we can as yet say nothing, for the height, though deducible from the tapering, has not yet been computed by anyone. The proportions of the capital as a whole, and of its parts, are excellent. The abacus is a thin, rectangular tablet. In the Middle Empire it was made thicker. It is only by comparing these Abusir fragments with later examples of the lotiform order, such as the Middle Empire rose granite column in the British Museum, which was at a later date inscribed with the cartouches of Amen-hotep III. and other New Empire Pharaohs —it is only by comparing the Abusir column with these that its surpassing merit becomes obvious. We may, I think, justly conclude that the Memphite architecture of the Fifth Dynasty was highly meritorious, and may have been the finest ever produced in ancient Egypt, or even in the world before the great days of Greece. Foucart may, perhaps, be justified in calling the Memphite period the Periclean age of Egypt.

There is no reason for assuming that before the making of the Abusir column there was any long period of slow development of the style. Like all other styles it probably arose swiftly when the time was ripe. A long preceding period of mud-and-reed architecture there may have been, in which types were formed by the character of the materials used. A long preceding period of stone building we know there was, stretching away back to the pit-chamber of the King Khasekhemui, about 4350 B.C., in the middle of the Second Dynasty. The date of the Abusir column is about 3600 B.C. During the intervening seven and a half centuries, the masons of Egypt learned their craft and were fitted to become artists. As power came to them they first lavished it upon the ponderous magnificence of the pyramids, striving, it would seem, to make their masonry ever technically more sound, more exactly finished, more surprising by the smoothness and mathematical accuracy of the monstrous completed edifices.

When the columns in Ptah-Shepses' tomb were discovered they were unique for their date; now they are no longer so. Excavation proceeds so rapidly that the novelties of one year become mere types a few years later. The pyramid field of Abusir is being systematically explored by the German Oriental Society, and they have already added much to our knowledge. They have already laid almost entirely bare the pyramid temple of the Fifth Dynasty king, Ra-en-user, which is earlier in date than Ptah-Shepses' tomb. Its inner part, which lies close to the E. foot of the pyramid at its S. end, seems not unlike the temple of

Seneferu's pyramid, but is not yet wholly uncovered. In front of that was an oblong court-yard, surrounded by a colonnade of clustered monolith granite columns, similar to the one we have discussed, but unfinished. Each is inscribed with the title of the king, who is said to be "beloved by the gods of Lower (or Upper) Egypt." The architraves were also of granite. This court is approached by an open passage or narrow court, flanked on either side by carefully guarded chambers for offerings. It must be remembered that pyramid temples, which corresponded with the chamber of offerings in a mastaba, are altogether different from temples for Divine worship, and neither throws light upon the other's plan; but as far as architectural style is concerned they may be considered together. In Ra-en-user's temple we find the gorge cornice and the colonnade of clustered columns fully developed. The courts were floored with basalt. In the great court was a red-sandstone cistern to catch the rain-water. A drain led this out to another red-sandstone cistern. The base of the walls was also of basalt (in places of granite), which explains the black-painted dado so frequently found in tomb-chambers of the Old Empire. The walls, above the basalt foot, were all covered with fine plaques of white limestone, delicately carved and painted, whereof only fragments remain. The side posts of the magazine doors were of red sandstone; whether granite was used for the chief portals is not stated. The only fragment of sculpture found was a noble head of a colossal granite lion. There were also remains of an alabaster altar embellished with reliefs of the various nomes.

Another pyramid temple, that of Nefer-er-ka-ra, exists in the neighbourhood, but has not yet been dug out. All that is visible of it is built of crude bricks, but the base of a fourfold clustered column has been found. Remains also exist at Sakkara of the funerary temple of Unas, last king of the Fifth Dynasty, from which a monolith rose granite column with a fully developed palm capital has been brought to Berlin. It is very roughly sculptured and may never have been finished. Two other granite columns of Unas are in the Cairo Museum.

Throughout the period when true stone-architecture was arising in Egypt—the last part of the Fourth and the whole of the Fifth Dynasties—it is evident that pyramid building steadily lost its charm for the kings.

Khafra's pyramid was smaller than Khufu's, Menkaura's than Khafra's; their successors were yet smaller. Why was this? Evidently because as time advanced less of the mass of human energy under the command of the king was devoted to pyramid-building, and more to building of some other sort. It was just then that such indications as we possess lead us to conclude the new style of architecture to have been arising. A new style of architecture only arises in a great building epoch, and great building epochs do not come unless the circumstances of the day demand them. The present is a great building epoch in America. Why? Because a newly-made nation of over eighty millions of people, which has developed new habits of life and business and a new method of government suited to its circumstances of time, place, and race, imperatively requires its families, its firms, its companies, and its institutions to be housed, and commands all the necessary means for doing the work. That is why it is certain that the style of architecture of the future is now being developed on the soil of the United States.

If the Fourth, Fifth, and Sixth Egyptian Dynasties were contemporaneous with a great building epoch, the reason was not dissimilar. The First Dynasties had to organise and develop the land they had conquered. They had to drain and irrigate it, to master the problem of the Nile, to organise the tribes of Egypt, and weld them into a nation. By the end of the Third Dynasty this work was accomplished. Wealth resulted. The governing class grew rich; the king very rich. He disposed of countless strong arms and skilful hands, for his people had been acquiring skill from prehistoric times and were naturally gifted with

more than ordinary capacity for dexterous workmanship. During this formative period a new civilisation sprang up, a new religion grew, a new ideal took root in the minds of the Egyptians, a new social structure and a new governmental system were developed. Thus about the time of the Fourth Dynasty there arose a demand for the "housing" of these new ideas. The first creature that clamoured for material accommodation was the ghost of the king, requiring a home to last him ten thousand years; then came the ghosts of his nobles; next it was the turn of the gods. Palaces and houses were no doubt called for of increasing magnificence, and forts to guard the country from attack. It was in the effort to respond to these demands that the Egyptian style of architecture arose and took definite form.

Unfortunately it is mainly by inference that we arrive at this result. Fourteen years ago I came to the conclusion, which I then put on record, that the Sixth Dynasty was contemporary with a period of good architecture. "Sixth Dynasty doorways," I wrote,* "are better proportioned and often very effectively decorated. The interiors, too, of tomb-chambers of this period are spacious, and produce a pleasant effect upon a person entering them. If we had a few more remains, or if those we do possess had been more wisely studied, we could generalise more confidently. As things are, it is only possible to express the opinion that, about the time of the Sixth Dynasty, Egyptian stone-building began to enter the domain of architecture." At that time I was almost alone in such an opinion. Now it appears I might have been hardier still, for it was not the kings of the Sixth but the last kings of the Fourth Dynasty that presided over this important development.

Let us now turn to consider the character of the Divine temples of the Old Empire. Fragmentary remains prove that Khufu used granite in temples built by him, whilst the so-called Temple of the Sphinx exists to demonstrate the freedom with which the hardest rocks were employed in large masses by his successor Khafra. We shall probably be safe in conjecturing that their successors of the next two Dynasties added to these buildings and themselves built a great many more. Probably these first stone temples took the place of earlier shrines of crude brick, as they in their turn had replaced the slight wattle or mud-and-reed shrines of the prehistoric folk whose forms the hieroglyphs preserve. Egypt in the days of her greatness was sown from the Second Cataract to the edge of the Mediterranean with a series of vast temples, such as no other country in the world has ever equalled for size and number in any equal area. Almost all those temples were built on sites occupied by earlier temples of the Middle Empire, and the temples of the Middle Empire themselves either replaced or included the shrines built in the first great stone-building age, when the kings of the Ancient Empire were on the throne.

What were the earliest Ancient Empire temples like? That is a question we may never be able to answer with any accuracy, but we possess some indications that throw light upon it. To begin with, we know that the shrine was the chief feature, and we know what that shrine was like, for its fossilised likeness is preserved as the Holy of Holies of almost every later temple. Thus the small temples at El Kab and Medinet Habu contain shrines which are in each case older than the adjacent courts and chambers. These shrines may themselves have replaced earlier crude-brick or stone shrines. A second important fact was deduced by Foucart from observation of existing later temples. All of them possess one marked characteristic. Entering them through the great pylon, and proceeding inwards from court to court and from chamber to chamber, there is a steady diminution in height the further you advance. The reason for this is plain. The normal temple plan resulted from a series of accretions. An Ancient Empire shrine received additions, mostly in front, in the Middle Empire, and

* *Dawn of Art*, p. 103.

successive further additions in the New Empire. Often, of course, the old parts were ruinous and had to be rebuilt, but, according to the general Egyptian way of doing things, the habit was to reconstruct the old parts on the old scale, and as far as possible in the old style, and

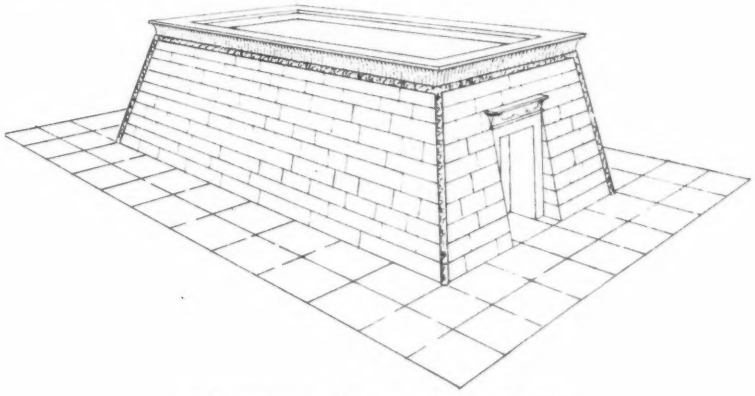

FIG. 10.—TYPICAL EARLY SHRINE TRANSLATED INTO STONE.

to add the new parts in the new style. The Middle Empire built on a larger scale than the Ancient Empire, the Eighteenth Dynasty on a larger scale than the Middle Empire, and the Nineteenth larger than the Eighteenth. Thus a big temple, resulting from the accretions of various building periods, naturally grew in scale from shrine to pylon, and this feature was adopted into the style of temple design, so that even a wholly new temple was built in that fashion. From these considerations we may safely conclude that the Ancient Empire temples were small in scale.

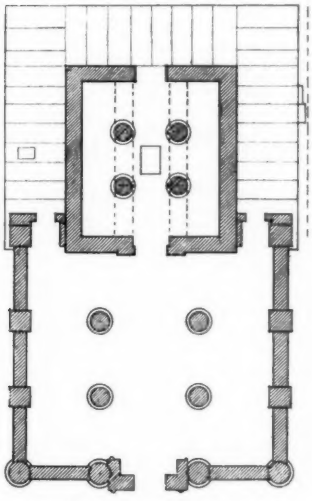

FIG. 11.—SMALL TEMPLE AT EL KAB.

The best of them, the important royal temples, were probably built of the hard and precious rocks, such as granite, diorite, porphyry, and alabaster. Some of these are the materials used in the so-called Temple of the Sphinx. The few inscribed stones that remain to us from the ruins of Ancient Empire temples are mostly of similar substance. As under the Middle Empire, limestone was employed in conjunction with more precious materials. The quality of the materials employed formed no small part of the charm of the temples. Beautifully sculptured monolith rose granite columns must have been common. We have every reason to conclude that all the later types of column and capital were fixed at this time. The lotiform, palmiform, and campaniform or papyrus orders are all represented in the painted reliefs of the Ancient Empire. No doubt the sculptured details of all of them were better done at this early period than ever later.

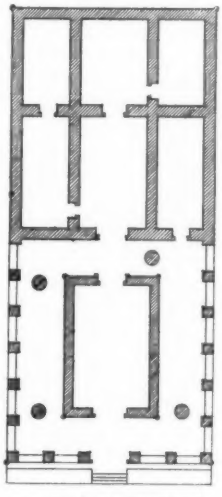

FIG. 12.—SMALL TEMPLE AT MEDINET HABU.

The recent German excavations have revealed the chief part of one Fifth Dynasty Divine temple to which we must pay brief attention. It was built near the Abusir pyramid-field by the King Ra-en-user in honour of the sun-god Ra. Instead of a shrine its chief feature was an obelisk raised on a massive base covered with great blocks of granite at the foot, and with fine, white limestone above. This obelisk was the principal object in the rear part of a large court. Before it stood a splendid alabaster altar or table of offerings, which appears to have been surrounded by some sort of wall or balustrade. At one side of the court was a row of ten great alabaster basins. The rest of the court seems to have been open except at the foot of the obelisk, where there were some beautifully decorated chambers. The temple faced east. There were a row of store-rooms along the north side, and a covered passage all round. Fragments of clustered columns show that there was also a colonnade within the court. The outer walls were built of big blocks of hard, yellow limestone. The inner walls were badly built but covered with plaques of finest limestone carved with delicate reliefs above a dado painted black. These wall-plaques of fine stone applied to coarse masonry no doubt descend from the old facing of tiles applied to crude-brick walls. At important points the base of the decorated walls was of granite. The ceilings were painted with yellow stars on a blue ground. The relief carvings were admirable, in the style of the best reliefs in the almost contemporary tomb of Ptah-hotep. The subjects represented were the foundation ceremonials, the *sed* festival, the seasons of the year bringing gifts to the sun-god, the king making offerings, and so forth—the usual style of temple decoration at a later date. There is a charming schematic representation of the Nile, with trees and plants on its banks, and birds flying above lotuses.

It is to be noticed that this temple is built over remains of earlier crude brick buildings. Our misfortune is that it should chance to be a temple with an obelisk instead of a shrine. We may conclude from it that the contemporary shrine temples likewise stood in peristyle courts and were supplied with a number of store-rooms. There is as yet no sign of any hypostyle hall, such as formed an invariable part of a temple of the New Empire type.

The great temples of the New Empire were adapted to the elaborate ritual of a period of priestly dominance. If a purely priestly class existed under the Ancient Empire it occupied a subordinate position in the State. The days of the Ancient Empire, especially of the Fifth Dynasty, were a pious period. This is not merely shown by the energetic temple-building, but by the tomb inscriptions of individuals, in which mention of some ecclesiastical activity of the deceased is common. The chief people of a place took the lead in temple ceremonies. Men who did nothing else but attend to a temple seem to have been mere servants, with one or two very high exceptions, such as the priestly colleges of Heliopolis and Memphis. The Uebs, Cherhebs, and Prophets, that is to say the chief temple officials, were what we should call leading laymen.* Under the Middle Empire the laity were less closely connected with acts of public worship; after the Eighteenth Dynasty they took no active part in them at all. The laity were gradually and at last completely ousted from the temple services, and their place taken by an ever more numerous priestly caste. Hence the temples of the Ancient Empire were not called upon to provide the kind of accommodation that became necessary later. There are indications that the early dynastic Egyptian ritual was chiefly processional. The actual Ark of the God was a boat, evidently implying the idea of motion from place to place. Hence the earliest dynastic shrines had doors at both ends, and, as Petrie says, were mere resting-places for the ark. Ark-shrines even in very late days were surrounded by a corridor. An ordinary early temple, therefore, probably consisted of a shrine, open at both

* It is noteworthy that the Ra temple at Abusir is connected by a ramped roadway with the neighbouring walled village or town, indicating the close connection then existing between the temple and the folk.

ends, with a pavement outside all round for the procession,* and a courtyard all about. A portico before the shrine, or all round the courtyard, may have been an early addition. The hypostyle hall was added later.

The last point we have to consider is the character of the sculptured decoration applied to Old Empire temples, and the system of its distribution. No Egyptian sculpture in the round ever surpassed, though lost earlier work may have equalled, that of the Fifth Dynasty, as the famous Scribe of the Louvre still sits to manifest. The mural decorative sculpture of the Old Empire was correspondingly excellent as far as it went, but it suffered from a great defect that sculpture in the round escaped. It was governed by faulty Egyptian perspective. A figure in the round could be absolutely copied from Nature, but a figure in low relief could only be truthfully represented by the aid of conventions not yet invented. An Egyptian artist knew no other way than of drawing a head in profile, the trunk below as though seen from in front, and the legs again in profile. We soon grow accustomed to this strange treatment, but we cannot like it. Art, however, can override all conventions and blossom in spite of the faultiest. Quality of surface is the great test of bas-relief. The best Fifth Dynasty work in this kind is sometimes good, though seldom to any high degree. The best result is attained when the artist treats vegetable forms, especially thick growths of lotus and other luxuriously growing plants. It is evident that he relied strongly upon colour for decorative effect. Where the colours have survived an excellent effect is obtained. It is necessary to imagine these sculptured plaques under the circumstances for which they were made. The wall-space above the plain dado was a great sheet of faultless chalk-white limestone, on which the figures and other objects were brought out in bright spaces of flat colour laid upon low reliefs. The effect cannot but have been excellent, especially when the white walls were set off by colonnades, architraves, and doorways of rose granite finely polished. Hieroglyphic inscriptions at this time were sparingly used, and the individual signs cut with detailed care. There were none of those clumsy, huge, sprawling inscriptions wherewith the bombastic Pharaohs of the Nineteenth Dynasty shouted from all over the walls and columns of their own temples, and such earlier ones as they left standing. The Old Empire architects and decorators understood the value of finish, delicacy, and reserve.

Bear in mind that the Egyptians attained to perhaps the most perfect comprehension of how to design and carry out a decorative scheme in one logical style ever attained by any people. Every form they employed, whether in their architecture or their sculpture, their paintings, their writing, their decoration of every object large or small, employed for whatever purpose, was the consistent outcome of a single artistic ideal. All parts therefore harmonised together, if scale and position were aptly chosen, and under the Old and Middle Empires decorators were masters in the aptness of such choice. Take any example of Egyptian decorative art (not architecture only) of any good period down to the Eighteenth Dynasty, and you will find this to be true. The Papyrus of Ani, for instance, is an easily accessible example in the admirable reproduction of it which is within the reach of all. Open it at random—say at the last plate or the last but one—how satisfying is the whole regarded as a decorated surface! what could possibly be better? This characteristic, common to practically all works of art in the Egyptian style, must have been impressed upon the style itself at the period when it came into being, that is to say, under the Old Empire.

If more Old Empire temples had been preserved—indeed, if any one such temple had been preserved in any sort of complete state—it is probable that we should rate far more highly the artistic product of Egypt, even than we do to-day. Every one of the great

* This pavement may have been covered in by a portico at an early date, thus producing a peripteral temple.

temples now standing on the banks of the Nile was built at a time of decadence. Not a single one survives from any of the developing periods, those, namely, of the Fifth, the Eleventh, and the Twenty-sixth Dynasties; all that is left of them is ground plans and fragments. It is a strange misfortune. In spite of it Egypt has impressed the prestige of its mighty name as a country of great buildings and noble art upon the imagination of succeeding generations. We are only now beginning to realise that the reputation of Egypt as an ancient artistic nation, so far from being exaggerated, does not attain the level it deserves.

DISCUSSION OF SIR MARTIN CONWAY'S PAPER.

The President, Mr. Aston Webb, A.R.A., F.S.A., in the Chair.

Mr. R. PHENE SPIERS, F.S.A. [*F.*], said that Sir Martin Conway's Paper not only brought them up to date with the latest discoveries, but it was the first time that an attempt had been made to fix an approximate period for the commencement of a style of architecture in Egypt. Of course there might be some difference of opinion as to the point at which that would begin. Sir Martin had mentioned the fact that the earlier tombs were imitations of the palace or the residence of the deceased, that they were cut in stone, and that they were cut in imitation of the houses or palaces which were built either in reeds or in crude brick. The question arose, when the structural necessities of one material were translated into stone that did not require those peculiar forms, was that an architectural work? It was symbolic work, no doubt; but because the gradual imitation of those forms had led to architectural forms, that did not constitute architecture. They began by copying one form, then they decorated it, and then it became an architectural feature. It was difficult to decide at what period the building might be looked upon as of such good proportions, and of such refinement of design, as to constitute an architectural building and not an ordinary building. As regards the columns, rendered with such exaggerated slenderness in the hieroglyphics and other representations, there were still in existence columns of extremely slender proportions—more so, probably, than the one at Abusir—in some of the tombs of Beni-Hasan. It occurred to him when he first saw those tombs that it was an attempt at an imitation of the interior of a tent. The columns were carved out of the solid rock with the decoration of flowers which were placed on the tent-posts. Those columns seemed to him quite as slender as the very early one Sir Martin Conway had mentioned, and which seemed to be even more beautifully detailed than the columns of Beni-Hasan. The date of the column referred to by Sir Martin Conway was 3600, whereas those of Beni-Hasan were about 2600, a difference of 1,000 years. Sir Martin had pointed out that in one of the late temples discovered by the Germans the columns were evidently those of the papyrus and not of the lotus. He should be glad to know the difference between a papyrus and a lotus column. He had always thought that the series of columns bound together were all lotus plants, and that at times the capital, instead of being a series of lotus buds, had the papyrus flower planted on the top which constituted the bell-capital. He was not over-willing to accept the tent-peg theory of Professor Petrie until he saw a representation of the hieroglyphics of the tent construction, in which a form was represented which was almost identical with the capitals of the Palace of Thothmes at Karnak. The reason he had always assumed that those capitals were turned upside down was because the clerestory window was above the level of the capital. If the light was above the level of the capital the artist might have thought the decoration would be better seen if the capital were turned upside down. Professor Petrie agreed with that view. He thought Sir Martin was quite right in saying that there was no wooden construction; but the question was whether the outsides of some of the richer buildings, the palaces for instance, were not covered with a framing of timber, because, after all, if they accepted the fact that they were of reeds, why were the reeds square? He thought there was a tendency to cling a little too much to Perrot and Chipiez' theory that the woodwork was framed outside. Sir Martin Conway gave two periods—the wattle and mud and reed, and then the crude brick. He (Mr. Spiers) had not thought there were two periods: he thought the crude brick was likely to be quite as early as the other, but that was a question not possible now to determine. Sir Martin Conway might have insisted more on a very important fact. Those who had not been to Egypt were unaware that almost all the modern buildings up the Nile suggested in the distance ancient temples. As one approached a village one saw magnificent piles, which turned out to be only

pigeon-houses. All the walls were obliged to batter: they must have a very wide base in order to support the brick above them, and that necessitated that they should batter either side, and that batter was copied in stone. It led to many singular results as regards doorways and other things. Then the reeds which came round it were the reeds protecting the edges of the building, also in crude brick. The cornice Sir Martin called the "gorge"—a term taken from Perrot and Chipiez' work—was best known to them as the cavetto, or cove-cornice. The term was used throughout the translation, and he supposed that was the reason it had never come into use. He had much pleasure in proposing a hearty vote of thanks to Sir Martin for his excellent Paper, and also for the interesting slides with which he had illustrated the subject.

Professor BERESFORD PITE [*F.*] said it gave him great pleasure to second the vote of thanks to Sir Martin Conway for his very interesting Paper, to the discussion of which he was afraid he could bring nothing but a certain spirit of inquiry which was aroused on that interesting evening when Professor Petrie read what Sir Martin described as his epoch-making Paper. If he remembered aright, in that discussion Sir Martin, whom they then had not the gratification of greeting as the Slade Professor of Fine Art at the University of Cambridge, interjected the observation—he believed it was a passing interjection in debate—that all styles proceeded on the basis of imitation, the imitation of some other method of building in another material. He prophesied to himself on the present occasion an interesting controversy between the Slade Professor of Fine Art and the editor of their best known architectural journal, who he believed on the occasion of Professor Petrie's Paper took a very different view. He did not know whether he was right, but he had his suspicions that the Paper that evening had been prepared with that militant intention, and that the thesis which had been so clearly put before them had been prepared with a view to attack. He was not going to attack it. He would not say that the thesis appeared to him incapable of attack, even in the presence of what they knew as to the development of Greek architecture, and the strange delight which the Greeks seemed to have taken in imitating, in glorious building material, constructions of an inferior material following the lines which Sir Martin had so clearly laid down with regard to the progress of the Egyptian style. They turned their minds westwards, and found that they were living in an empire, the Western Empire of ancient Rome, in which a magnificent architecture grew up in masonry, out of nothing but masonry. Only in a very indirect—he was going to say only in a very theoretical—manner could it be supposed that Gothic architecture owed anything to imitation of preceding methods of construction in another material. In some decorative details they traced the illustration of a form seen in other countries; in Gothic capitals they traced representations of the acanthus and volutes, in France and in some parts of England. But English architecture grew up and developed by a delightful combination of architecture and building, which Sir Martin described as building to give pleasure—a sweetly simple phrase which they ought not to forget. There was singularly perfect engineering in English mediæval architecture and a singular refinement of form combined. Might Heaven send them such another period! But in Egypt there was a high constructive ability, a high technical ability in the working of stone, instanced by that temple of the Sphinx, the one Egyptian temple he had seen; his hair almost stood on end when Sir Martin Conway put on the screen one of his (the speaker's) drawings of it. He made that drawing for Professor Poole many years ago, years before he saw the temple; and as to the proportions of it, it was traced from a French plate, spoilt by the absurd sheik in front. But they found that very fine dealing with stone had no relation at all to æsthetic value. Apparently, at a much later period, the æsthetic period harked back to what he might call the childish delight of imitating one material in another; that expression of pleasure seemed to be the only *raison d'être* for the perpetuation in masonry, glorious masonry, of the crude forms of rush and mud. There were a number of ideas that Sir Martin Conway had gleaned and put together for them, ideas which it was a little difficult to relate in a hurry. The relation to the tent was dissimilar essentially from the relation to the rush hut. The rush building, again, was dissimilar in method from the sun-dried brick building. They had the tent-peg column, they had the batter wall, the cavetto, the torus from the rush and mud, and then they had the niche, the recessing from the brick construction clearly. That those methods of construction existed side by side, and died, that they were replaced by a massive unadorned stone construction, and that then at a later period an æsthetic instinct went back and collected from the rush and mud, and from the tent, and from the unbaked brick material for expression, was a vastly interesting statement. He hoped it would not be attacked successfully. It opened up a new vista of the operation of the architectural mind. Well, they lived in a period when the architectural mind had to operate in various different ways. Sir Martin Conway skilfully drew their attention across the Atlantic, where they were building, with steel and something else, but mainly of steel, an architecture to suit the expansive imagination and expanding pockets of their American brethren. But that steel work was imitating and adopting—for it could do nothing else—the methods, the detail, the forms,

of the effete architecture of the Western Roman Empire in stone. It would be interesting to cast a prophetic eye forward to the day when some New Zealand Slade Professor of Fine Art would come along and unearth this exceedingly interesting problem of why and how their brethren across the Atlantic succeeded in putting their minds back behind the vast possibilities of beauty of iron work which had been developed, and laying hold of the decaying remnants of a stone architecture which was destined to vanish, just as the rush-and-wattle architecture of Egypt had vanished, and crystallising its work, preach to an audience of ladies and gentlemen in the dim future on the operation of the architectural mind!

MR. E. W. HUDSON [*A.*], in supporting the vote of thanks, said he was struck with the great advance made in our knowledge of the subject in the last ten years. It was very noticeable by those who had not kept pace with recent thorough researches, but only remembered reading the immature conclusions of writers half a century back and the superficiality of early exploration. The remote date fixed by the ancient Egyptian priesthood was not received, but on the other hand no such antiquity as that now attributed to Egyptian building was suspected. The fictitious date of the first *god-kings'* reign (17,570 years B.C.) was only conceivable by assuming that the early year was a *month* of our time, and so arriving at 1464 B.C., or about the period Jacob is set down (by Archbishop Usher's chronology) as erecting a stone pillar on Mount Gilead. It was felt that Herodotus was drawing the long-bow, that nothing was known for certain further back than the reign of Psammeticus I. in the seventh century B.C., and outside the Old Testament nothing definite was to be obtained. Now, however, the lowest stratum of antiquity was mined and the spring of history tapped. Professor Flinders Petrie in the Paper read before them two years ago had given a date *c.* B.C. 4800 to mud and reed huts, which was 800 years before the alleged date of the creation of the world, and stated that at the same period marble and limestone in carved tombs were in use, and 500 years later stone was used for buildings, and was even hammer-dressed. It was noticeable that the domed hut shown by Professor Petrie* had never been imitated in stone, like the trabeated conversion of the flat-roofed hut. Yet the barrel vault was used in Egypt, B.C. 4200, in what seemed a cave-like building, but never, so far as he knew, developed into roofing for covering exposed buildings. Another point had struck travellers, viz. the similarity between Egyptian and early Indian temples, and he would much like to hear Sir M. Conway's views on the relative influence of one on the other. It was formerly thought that the Eastern design influenced the West, instead of *vice versâ*. When the first Sepoy soldiers were sent to Egypt to help the British early last century they could not refrain from celebrating their religious rites in the temple, as they would have done at home. Hermopolis and Elephanta had been often compared. It was thought that, "though it was not possible to say how ancient either might be," yet the cavern temples were the originals, and the heaviness of Egyptian work attributable to the idea of its having to bear superincumbent rock. That the later Indian styles were affected from the West by Classic influence had been shown by Mr. William Simpson's Papers in the JOURNAL,* but he was not aware of any one bearing upon the origin of the early Indian temples. Another reason advanced for the heavy style was that the Egyptians, among all their deities, entirely ignored the Graces. The additions made to small temples or to a mere shrine, increasing size and importance, as shown in the plans just exhibited, was an interesting point, for the same thing happened in the early Christian edifices. The addition of a narthex or cloister court in front of an adapted building was a very general expedient. The Romanesque crypt, also, might be a perpetuation of the same idea, being inclosed later by a superstructure on a nobler scale to accommodate more worshippers. The subject was most extensive, but the present Paper and that by Professor Petrie together made a very valuable record.

MR. R. F. CHISHOLM, F.S.A. [*F.*], said that there was the greatest possible similarity between the temples of India and Egypt. The temples were not only the same, but there was the same idea of the spirit of the departed visiting the tombs. In a mausoleum he had had to go into in Baroda he found a couch, a small dressed figure, and a plate of rice. The couch was for the spirit of the departed to recline on, the figure to give it corporeality, and if hungry it could eat the rice. The idea seemed to be exactly the same, but to show the connection between them would take a very long time. The subject was an exceedingly difficult one.

MR. HUGH STANNUS [*F.*] said he would wish to add his thanks to those which had been tendered to Sir Martin Conway. He had been much interested in all that Sir Martin had said; but he had touched upon so many points of interest that it would be perfectly impossible—in fact, he would rather guard himself from beginning to speak about them, for if he began it would be difficult to know where to stop. He (the speaker) had brought with him that evening a few of the photographs he had taken while in Egypt last season, through the favour of Professor Flinders Petrie, thinking they might perhaps help Sir

* Vol. VIII. 3rd Series, p. 342, fig. 1.

* Vol. I. 3rd Series, p. 93.

Martin in his demonstration about the evolution of the column. He showed three examples of the sixteen-sided shaft, the first one being at Beni Hasân, the second at Dêr-el-Bahri, and the third one in the halls by Tehutmes III. near Karnak. The next photograph showed what was late in point of time, but very early in point of design, that is, the square pier, which was used in that very interesting granite temple near the Sphinx. The example shown was from the temple of Sety I. at Abydos. The view showed a couple of the piers in front of the temple. The architect had carried out the same idea as in the granite temple near Gizeh; he further utilised the square piers inasmuch as they gave such splendid opportunity for storiation. There were twelve such piers, and photographs were taken of the whole set. They gave almost an epitome of the Egyptian Pantheon at the time—that is, in the Nineteenth Dynasty. The next photograph showed the very interesting columns of Tehutmes III. near Karnak, to which Sir Martin Conway alluded, which was no doubt the translation into stone from a tent-pole original. The next photographs showed the development of the lotus-bud top from the Twelfth Dynasty example, in which the buds were actually separate, with the five fasciæ tying them, and with the smaller buds tied-in between them to fill up. Also in the front of the temple near Gurna, and in the temple of Sety at Abydos, where was seen the combination of the two kinds of tops and the two kinds of shafts. He hesitated to use the word "capital" for a reason he would speak of presently; but he would draw attention to the inner row of columns that immediately faced the seven great sanctuaries. The columns of this row were almost cylindrical in profile and almost circular in plan, except that there were narrow flat bands for hieroglyphics down each side. The other rows of columns were decorated with the original lotus-bud treatment. Another photograph showed Sety's columns in front of the temple near Karnak, not yet excavated. It would be observed that the original natural flower prototype became gradually forgotten in process of time. The profile was retained, but the surface was first smoothed, and then it was treated as a field for storiation. The photograph of one of the side avenues in the Hall of Columns near Karnak showed how those upper portions were storiated with the names and the titles of Sety in some cases, and his son Ramessu II. in others. When it got to that, it was evident that the original idea of the column and its decoration by flowers was forgotten, and the whole of it was freely treated as so much surface to be storiated. The next three photographs showed the evolution of the Hathor treatment; but as Sir Martin did not deal with those he would pass them by. The last photograph showed the use of a Ptolemaic capital in a mosque at Cairo. With regard to the five ligatures which had been spoken about, there were always five, as if there were some idea taken from the fingers of the hand which would grip the flower-stems while they were being tied, and the number *five* may have dwelt in their minds. Those five were evidently ligatures, because in some columns the loop of the tie was shown as hanging down. He would like to say one word about Professor Conway's use of the word "capital." When preparing his Lectures, some twenty years ago, he thought it was a misnomer in Egyptian architecture. Probably the old Egyptians had no idea that they were making a "capital." It was not as if the architects had said to themselves in those early times, "Go to, now, let us make a capital," and behold they made a capital, and behold it seemed unto them very good, and behold it was a capital idea, and behold they said, "Let us call it a capital." There was nothing of that kind about it. The only idea, so far as one could judge in considering the matter, was that they had what, if Sir Martin Conway would allow him, he would say was a squared wood pillar (timber rather than a tree, because it was *square* at the top). At the Festival of the Great Nile Overflowing—to which the great prosperity of their country was due—they would decorate these shafts that supported their buildings (whether they were their houses or their temples) with bouquets or nosegays of the lotus flower, which, by reason of its great abundance in an overflow of great abundance, became symbolic in the minds of the Egyptians of the goodness of the gods. They decorated the upper part of the shafts with these bouquets, putting one on each side, and tying them round with the five-fold band before noticed. They were not thinking of making a "capital," but of thanksgiving for the goodness of the gods, in decorating the country, as they were now decorating their houses. The reason for the early choice, of the bud rather than the flower, was obvious: the lotus at some times is in bud and at other times is in flower, so that the architect, when he desired to perpetuate the bunches in more permanent material for the houses of the gods, would have the choice of the two: firstly the bud treatment, and secondly the open-flower treatment. The bud treatment required a less quantity of granite; and while they were using granite he had no doubt they chose it rather than the open flower. He thought Sir Martin Conway would tell them from his knowledge of Egypt whether there existed any granite shaft head which imitated the large open flower. For his own part he knew of none such. He knew the open flower was used in the Eighteenth and Nineteenth Dynasties, but then it was cut in *sandstone*, and not in granite. He fancied that, the size of the flower being so very much larger than the shaft, it would have been a great waste of material, whereas they saw

that the bud was very much the same size as the shaft, and therefore, as the granite columns were made monoliths—*i.e.* in one piece—they saved, not only the waste of material, but also the waste of the workmen's time, in cutting it, in keeping to the bud treatment. In either case it was symbolic of the goodness of the gods, and he thought that the use of the bud motive was just what one might term a reason arising out of the nature of the material. There were many points that he might have touched on if there had been a blackboard, and he might perhaps have made the matter a little more clear; but he trusted that they would take his expression of the pleasure with which he had listened to Sir Martin Conway instead. It was very interesting to them to find learned gentlemen like him, who had got very broad views of the whole branches of human activity in the sphere of art, collecting—or gleaning, as it had been so happily termed—all this information; and giving the quotations from M. Foucart and Dr. Petrie the *imprimatur* of his approval.

THE PRESIDENT, in putting the vote of thanks, said that the members of the Institute were most fortunate to have had this Paper read to them. It would no doubt be called an epoch-making Paper in its turn later on. They had had two such Papers this Session, one from Dr. Evans on the Palace of Knossos in Crete, and now Sir Martin Conway's on the early architecture of Egypt. Personally he had no knowledge of the country and had not studied the subject, so that he would not take up their time by making any remarks upon the Paper. None the less he felt that he was expressing the feelings of all in saying that they were greatly indebted to Sir Martin Conway for his excellent Paper, for the great research it evidenced, and for his kindness in coming to the Institute to read it.

SIR MARTIN CONWAY, in responding, replied to some of the points raised during the discussion. As regards the papyrus and lotus column, the difference between the bundle of papyrus stems and the bundle of lotus reeds was that the papyrus stems were always, roughly speaking, triangular. He should have pointed out on the slide that that must be a papyrus column owing to the well-marked ribs, the angularity of the individual stems. It was not necessary to assume that the rectangular forms of the façade decoration implied the use of wood; crude bricks naturally lent themselves to that form of decoration, as the Naqada tomb showed. There the whole of the grooving was rectangular in section because it was simply formed by the natural angles of the bricks, the bricks being thrust forward or withdrawn. That kind of rectangular grooving was characteristic also of the early crude-brick architecture of Chaldæa. It was a very important link between the earliest architects of Egypt and Chaldæa that both should have decorated externally their buildings in a similar way. As to any connection between the architectures of India and Egypt, he should not like to make any affirmation. All the stone work of India that they knew of was quite late compared with Egyptian architecture. He did not think there was any stone building in India known of until after the invasion of Alexander the Great, and by that time Egyptian architecture had practically come to an end, so that there could be very little direct connection between them. There was no instance of a stone dome in Egypt. The dome in mud appeared to have been employed on a small scale in Egypt as well as Mesopotamia, *i.e.* they had dome-covered corn bins and possibly other small buildings, but no building of any size that they knew of. The origin of the dome was one of the great unsolved problems of architectural history. He quite agreed with Mr. Stannus in what he had said about the Egyptian capital. Those were not, strictly speaking, capitals. In almost every case—in the case, he thought, of all the earliest columns—the capital was part of the monolith out of which shaft and capital were cut in common. It was not a separate member; it was merely the upper part of the column. One called it the capital for the sake of convenience of description merely. It was not, strictly speaking, a capital. Probably, all the Ancient Empire stone columns were monoliths, and so he thought they were in the Middle Empire. It was not till the New Empire that columns were found built up of drums. As to the nosegay decoration, he should not like to say much. It would be very nice to agree with it, and the greatest authority, M. Foucart, was at one with Mr. Stannus in the belief that the idea of those floreated columns was taken from some floral decoration applied to columns either of assembled reeds or occasionally, perhaps, of wood on festal occasions. The trouble was that in all the earliest columns they knew of the weight was laid straight on the top of the bud, and that could never have been any decorative feature derived from a real use. He thought they would have to wait before they could determine the origin of the idea. As to the use of forms translated into granite, they knew of the lotus bud in the very earliest period as used. There was also the palmiform capital carved in granite in the Fifth Dynasty Temple of Unas. Other forms were doubtless employed simultaneously with these, as small decorative objects proved, but no other ancient originals had yet been found. He regretted that he had had a great deal more to say on the subject than a single Paper could contain. Moreover what he had written was itself too long to be read properly. He had to race through it instead of explaining details that he ought to have enlarged upon, and, therefore, he had put the subject before them un-

favourably and incompletely; but the object of his Paper was to suggest inquiry rather than to attempt to solve finally any problem.

MR. R. F. CHISHOLM, F.S.A. [*F.*], writing on the 19th inst., says:—I should like to add to the remarks I made last evening that the fact of the similarity between early Egyptian temples and early Indian temples is of interest because of the great lapse of time between the periods of construction. It tends to show a greater unity in all religious beliefs than one would at first imagine. All seem to be based on an unseen Spirit or Principle of existence to be propitiated by sacrifice and approached through mediators. This is the golden thread which binds all men in mental brotherhood, from the savage who supplicates his own hand-made fetish, to the pure spiritual teaching of Jesus Christ; and it is therefore of high interest to note the similarity between temples separated by such an enormous lapse of time as six or seven thousand years! Apart from this point, however, although even the earliest of the rock-cut temples is fourth or fifth century work, these temples are types of structural edifices, entirely obliterated, which may have taken many centuries to perfect. We have evidence in India that in the early Christian era the arts of Arabia (Egypt) on the one hand met those of China on the other; why should this process not have been a continuation or repetition of what obtained in more remote ages?

9, CONDUIT STREET, LONDON, W., 23*rd May* 1903.

CHRONICLE.

The President's "At Home": Nesfield's Drawings.

The second of the President's "At Homes," given at the Institute on Monday the 11th inst., was but little less crowded than the January one, and the occasion was in every way as successful and agreeable, and equally appreciated by all present. On view for the evening was a numerous collection of designs and working drawings of the late Mr. W. Eden Nesfield. The Institute is indebted for this exhibit to Mr. E. J. May, in whose possession the drawings now are, and the Meeting last Monday passed a very cordial vote of thanks to him for lending the drawings and for the trouble he had personally taken in the hanging and arrangement of them. Mr. John Hebb contributes to the present number a brief memoir of Mr. Nesfield, together with a list of his works compiled by Mrs. Nesfield from her husband's account books. Everyone is familiar with the beautiful series of Nesfield's drawings, published in 1862, illustrating mediæval architecture of the twelfth and thirteenth centuries in France and Italy. Through the exertions of Mr. R. Phenè Spiers a sum was raised a few years ago to purchase for the Library almost the complete collection of the originals of this famous series and a number of other drawings and sketches. Nesfield's student life and work as a draughtsman formed the subject of an article by Mr. Spiers in the JOURNAL for 22nd August 1895 [Vol. II.]. The illustration which accompanied the article, representing a pencil sketch of the Earl of Leicester's "Hospice," Warwick, affords a good idea of the delicacy and refinement which characterised Nesfield's work.

Abergavenny Free Library Competition.

In this competition, limited to architects practising in Monmouthshire, not only is there no assessor, and not only do the conditions state that no pledge is given that the architect whose plans are selected will be employed to carry out the work, but competitors are asked to state at what commission they would undertake the entire work, including the furnishing of bills of quantities; and the magnanimous corporation "*do not bind themselves to accept the lowest* or any offer." It is to be hoped that unless the conditions are radically altered members of the Institute will leave this competition severely alone.

Liverpool Cathedral Competition.

The Times of the 16th inst. reported that the Liverpool Cathedral Executive Committee, after careful consideration of the plans sent in by the five selected architects, Messrs. Austin and Paley (Lancaster), Mr. C. A. Nicholson, Mr. Gilbert Scott, Mr. Malcolm Stark, and Mr. W. J. Tapper, have decided not to accept any of them. It is

recalled that in drawing up the conditions of the competition the Committee made a strong point of securing ample accommodation within sight of the preacher for a large congregation in the proposed Cathedral. The design (No. 1) approved by the advisory architects does not appear to the Committee capable of fulfilling this condition.

The following is the advisory architects' report:—

"Gentlemen,—We have carefully inspected the five sets of designs submitted in competition for the proposed Cathedral at Liverpool.

"It is with much pleasure that we bear our testimony to the great care and pains that the competitors have bestowed on their work, and the admirable response they have made to the invitation of the Committee.

"The drawings, as drawings, are most excellent, and show skill in the working out of many difficult problems.

"Almost without exception we see the hand of the master himself and not merely draughtsman's work. This makes the designs doubly valuable.

"Out of the five competitors, four of them had sent in designs for the Cathedral in the first and unlimited competition. We note, with great interest, that the new drawings embody much general design and character as previously delineated by each competitor. This clearly shows that from the commencement all the four had decided views, and that the second competition proved no temptation to any to deviate materially from their original conception. This seems to us good evidence that from the commencement they had offered of their best.

"You may be sure that we, your assessors, feel the great responsibility of our judgment and the importance of this very rare occasion.

"What we had to find was not the best or the most beautiful drawings, but the best idea and the finest conception.

"Many of the drawings are attractive. But we had to look much further than that. We had to look at the real effect of the building rising to its final completion, at the dimensions and proportions of the different parts, such as the piers and arches of the great nave. We had to look at the practical and feasible aspect of the designs. We had to look for a sufficiently original conception. We had to look for a fine and a noble proportion, combined with an evident knowledge of detail. Lastly, we had to look for that power, combined with beauty, that makes a great and noble building.

"In the set of drawings marked 'No. 1' we find these qualities pre-eminently shown. We cannot but give it the first place.

"We should recommend that the *quasi*-east end should be drawn with the towers shown, and that a window of fine size and proportion should be shown for the gabled end, one suitable to receive the offered gift of stained glass, a gift that will greatly add to the beauty of the interior.

"We are, Gentlemen, faithfully yours,

"R. Norman Shaw, R.A.

"G. F. Bodley, R.A."

Reinstatement.

At the meeting of the Council held Monday, 18th May, Mr. Ernest O. Cummins was reinstated as an Associate of the Royal Institute.

REVIEWS.

THE AMERICAN VIGNOLA.

The American Vignola. Part I. The Five Orders. By William R. Ware, Professor of Architecture in Columbia University. La. 4o. Boston. 1902. Price 12s. 6d. [The American Architect and Building News Company, Boston. London agent: Mr. Batsford, 94 High Holborn, W.C.]

This work by an Honorary and Corresponding Member, Professor Ware, has been compiled by him to serve as an elementary text-book for the use of architectural students in the United States, and is the outcome of long experience in the class-rooms of the schools of architecture which Professor Ware inaugurated in Boston and New York.

Vignola's orders have always been regarded in the French school as embodying the best interpretation of the Roman orders, not only in their general proportions, but in their refinement of mouldings and detail, and we gather from the preface—first, that these orders have also generally been accepted as the standard in the United States, in preference to those of Alberti, Scamozzi, Serlio, Palladio, and Sir William Chambers, of which those by the last two have been followed in England; and, secondly, that when the late Mr. Richard Hunt (the first American student who entered the Ecole des Beaux-Arts in Paris, viz. in 1846) returned to Boston he started a studio in Tenth Street to impart to his younger *confrères* what he had learnt in Paris, and, as Professor Ware says, "setting aside the whole apparatus of modules and minutes, he showed me how to divide the height of my capitals into thirds, and those into thirds, thus getting the sixths, ninths, &c., of a diameter which the rules required without employing any larger divisor than two or three." In the French school, at all events, for sixty years, all the proportions are based on the *diameter* of the column; and the principal features, such as the architrave, frieze, and cornice, having been set up, they are divided and subdivided by divisors of two or three until the smallest fillet or bead has been calculated, it being found easier to recollect, for instance, that the fillet above the cyma in the Doric cornice

should be one-third of the cyma than two minutes of the module.

The work is illustrated by eighteen plates, which have been specially redrawn; of these thirteen are devoted to Vignola's orders (unless when otherwise stated), two to the Greek Doric and Ionic orders, and three others to pedestals, pilasters, pediments, superposition of columns and intercolumniation. We note that the employment of the orders with arcades between, which formed, perhaps, the only invention of the Roman architects, has been omitted, and with it, of course, the pedestals which have always been a stumbling-block to students, and which really constituted no part of the order as employed by the Romans; and there is no loss in their omission; but we think, on the other hand, that it would have been safer to give plates of the Roman orders (on which Vignola based his own interpretation) instead of those of the Greek Doric and Ionic, reserving these for Part II. of the work. The proportions and principles found in the latter are so widely different from those of Vignola that the student may become confused between the two.

It is evident that in the American glossary there are architectural terms which are different from those current in England. The terms "scrolls" and "filberts" are applied to those features which we call "volutes" and "bead and reel."

Mr. Partridge's system of employing the 60° angle for the setting out of the dentils and the modillions is ingenious, but it does not seem in the latter case to have been adopted by Vignola, and it is evident that in a cornice of great projection crowning a building the bed-mould would require to be much deeper, so that the theory would no longer apply.

The analysis and description of Vignola's orders should be of great value to the student, as it furnishes a complete glossary of all the architectural terms employed, with numerous illustrations of every feature. The perspective view given of each order in which two columns coupled together will respond behind them conveys to the student a clear idea of the actual effect of the column and entablature complete, though we should prefer to have seen the angle of a portico given instead, as the American student may imagine that these perspective views represent architectural features which may be stuck on as ornament to his building. R. PHENE SPIERS.

INTARSIA AND MARQUETRY.

Intarsia and Marquetry. By F. Hamilton Jackson, Examiner to the Board of Education on Principles of Ornament. With illustrations from photographs, &c. 8o. Lond. 1903. *Price 5s. net.* [*Sands & Co.*]

By the compilation of this work Mr. F. Hamilton Jackson has laid the student and the craftsman under some obligation. Both have long felt the want of a hand-book which would outline the history and describe the processes and technicalities of the craft.

Mr. Jackson has certainly not neglected the historical aspect, which absorbs no less than 103 out of a total of 145 pages comprising the work. These notes are unnecessarily copious owing to the mass of trivial and often wearisome particulars which load the pages. Is it interesting to know how many sisters one of the craft possessed, or whether they were older or younger than himself? Should the reader thirst for more details, he will learn that the father of the said craftsman was a mender of leather, and expired in the year 1460, leaving his family entirely unprovided for. The name of the street containing the shop where worked the surviving son is carefully chronicled, and the fact that he also slept on the premises. The reader who has taken pains to grasp these preliminaries will experience some chagrin when he discovers, towards the end of the paragraph, that all the work of the craftsman in question has long since perished. Mr. Jackson's zeal for the exhaustive has led him to mar his otherwise excellent work by a redundancy which in any future edition should be relegated to an exile appendical, or, better still, disappear entirely in favour of that only which is material to his subject.

In differentiating between Intarsia and Marquetry, the author deems it accurate "to apply the former term to those inlays of wood in which a space is first sunk in the solid to be afterwards filled with a piece of wood (or sometimes some other material) cut to fit it, and to use the latter for the more modern practice of cutting several sheets of differently coloured thin wood placed together to the same design, so that by one cutting eight or ten copies of different colours may be produced which will fit into each other, and only require subsequent arranging and glueing, as well as for the more artistic effects of the marquetry of the seventeenth and eighteenth centuries which were produced with similar veneers." The art is no doubt Oriental in its origin, as examples of both Assyrian and Egyptian inlay may be seen at the British and other museums. The Romans, and amongst them Cicero, admired the art to such an extent that from £5,000 to £15,000 was readily given for an inlaid piece of furniture. The great cost of the citron wood, which was such a prominent feature of the inlay, would account for such enhanced values. The mediæval craft seem to have relied on Oriental rather than Roman tradition, and the history of the art in Europe is illustrated by numerous and well-produced plates. It is also shown how the *intarsiatori* of the Renaissance were led to emulate the art of the painter, thus exceeding their true limitations. Pictorial effects

were rendered with extraordinary realism considering the means by which they were obtained. The expensive nature of the work gave rise to the production at one sawing of a number of inlays of the same shape but of various colours. This process reduced the art to a somewhat commercial basis, and is known by the term of marquetry. There is also much good advice as to the first considerations and limitations of the art, whilst from the concluding, and, by comparison, all too brief chapters on practice and technique, interesting and valuable information may be gained by the connoisseur, the student, and the craftsman.

Leeds. BUTLER WILSON.

ANCIENT GREEK SCULPTORS.

A Short History of the Ancient Greek Sculptors. By H. Edith Legge. With an Introduction by Professor Percy Gardner. London: Fisher Unwin, 1903.

This little volume gives a readable and trustworthy account of the Greek sculptors, with a notice of their principal works. The best part of it is that which deals with the subject when it has come out into the full light of history in the period after the Persian wars. The earlier chapters are less satisfactory. At the outset the authoress hardly seems to take her theme seriously, and little attempt is made to grasp as a whole the phenomena of the first period of Hellenic art. The very instructive story of Dipœnus and Scyllis, for example, is not handled so as to bring out its significance, and the legend of Dædalus with which the book opens is treated in very flimsy fashion. The relations of the earliest schools, and especially the widely extended influence of the school of Ionia, would have repaid a more extended treatment.

On the other hand from the time of Calamis and Myron onwards the narrative is well given, and the little book may be cordially recommended as an introduction to a more systematic study of the subject, which may be carried on by the aid of such a text-book as Professor Ernest Gardner's *Handbook of Greek Sculpture*. It may be noticed, however, in connection with the important subject of the interpretation of the fragments from the Parthenon, that it is misleading to give one out of many conjectural identifications as if it were proved or even generally accepted. The supposition that of the three female figures commonly called the Fates the one nearest the centre is Hestia, and the other two Thalassa, the sea, reclining in the lap of Gaia, the earth, is a mere guess, and by no means a likely one; yet in the text it is treated as an established article of faith. The book improves as it progresses, and the account of the later sculptors leaves little to be desired. It is disappointing, however, to find that the writer's evident enthusiasm for Greek art has not suggested to her a higher standard of literary style.

Edinburgh. G. BALDWIN BROWN.

THE NEW ENGLISH DICTIONARY.

Architectural Terminology.

DURING the first half of the eighteenth century—the age of Addison and Steele, of Pope and Swift, of Dryden and Defoe—the English language had attained to so high a degree of literary perfection that it was thought by many that the time had arrived for the preparation of a "Standard Dictionary," in which should be registered the proper sense and use of every word and phrase, and from which no polite writer of English henceforth would be expected to deviate. The idea was laid before Dr. Samuel Johnson, who undertook to produce the desired work, which in due course appeared in the year 1755.

But it soon became evident that Dr. Johnson's Dictionary, although far in advance of any of its predecessors, was by no means perfect; and so, when, just a century later, in 1857, the late Dr. Trench proposed to the members of the Philological Society that materials should be collected to form the basis of a dictionary truly worthy of the English language and of English scholarship, the suggestion was immediately adopted. Several hundred readers at once set to work upon the task of selecting and transcribing quotations typical of the use of words from all the great English writers of all ages, and many eminent scholars undertook to arrange the materials thus gathered. Upwards of two million illustrative quotations were thus brought together and provisionally arranged; but it was not until 1878 that a definite prospect of making use of this vast amount of labour presented itself. In that year specimens prepared from the materials which had been amassed were presented by Dr. J. A. H. Murray, on behalf of the Council of the Philological Society, to the Delegates of the Clarendon Press, who consented, under certain conditions, to bear the expense of printing and publishing a dictionary on the lines suggested. The work was then taken up with renewed vigour; an appeal for volunteers to collect additional quotations from certain specified books was made, to which more than eihgt hundred readers responded, and in the course of three years a million additional quotations were obtained. At length, in 1885, the first part of *The New English Dictionary on Historical Principles* issued from the Clarendon Press, and volume i., containing the letters A and B, was completed in 1888. At the time of writing five volumes of this truly wonderful work have been published, and as it is expected that

the whole will be completed in five volumes more, the end may now be considered well in sight.*

The labour involved in the production of this dictionary has been—and indeed still is—enormous. Some idea of it may be gained when it is said that in the volumes already published the total number of main words, each treated in a separate article, of special combinations explained under main words, and of subordinate words, amounts to no less than 148,753. And these five volumes, it must be remembered, contain only words beginning with the first eleven letters of the alphabet, so that fifteen letters yet remain to be dealt with. It may be added, as an indication of the magnitude of the undertaking from another point of view, that volume ii., which contains only words beginning with C, weighs 12 lb. 11 oz.

Interesting though these facts may be, however, they furnish comparatively little indication of the value of the dictionary as a dictionary. This is not to be judged by its size, nor yet altogether by the number of words which it records. Its usefulness must be measured by some other rule than mere bulk, which, indeed, is in itself a disadvantage. What standard, then, are we to apply? Dr. Murray, the editor, supplies it himself in the preface to volume i. "The aim of this Dictionary," he says, "is to furnish an adequate account of the meaning, origin, and history of English words now in general use, or known to have been in use at any time during the last seven hundred years. It endeavours (1) to show, with regard to each individual word, when, how, in what shape, and with what signification it became English; what development of form and meaning it has since received; which of its uses have, in the course of time, become obsolete, and which still survive; what new uses have since arisen, by what processes, and when; (2) to illustrate these facts by a series of quotations ranging from the first known occurrence of the word to the latest, or down to the present day, the word being thus made to exhibit its own history and meaning; and (3) to treat the etymology of each word strictly on the basis of historical fact, and in accordance with the methods and results of modern philological science."

After reading these words, one turns to the pages of the dictionary to see if this high aim has been attained; and, open it where one will, one is rarely disappointed. The crispness of definition, the care expended in indicating the pronunciation (so necessary in English, where the written symbols often bear no relation to the spoken word), the scholarship displayed in the treatment of the etymologies, and, above all, the wealth of illustrative quotations, at once place this dictionary far ahead of any other which has yet been produced in this or perhaps in any country.

The vocabulary of each man varies according to the nature of his business, his reading, his pursuits, and so forth; it widens out in those directions where his interests lie, and contracts in other directions with which he has no practical connection; and no lexicographer can be expected to record *all* the words which *every* man knows. It may sometimes happen, therefore, that the architect, whose vocabulary contains of necessity a very great number of technical and trade terms, may search the *New English Dictionary* in vain for some, to him, familiar word. Yet it is remarkable how few even technical and trade words have escaped the vigilance of Dr. Murray and his coworkers. Such—to the general reader—unfamiliar words as *bolection, arris, intrados, joggle, dog-legged stair, grouting*, and many more, are all duly recorded, defined, and illustrated by one or more quotations; and if one might venture any criticism it would not be that more words should have been included, but that the definitions of one or two which have been included might perhaps have been expanded with advantage, or that better quotations in illustration of their meaning might have been chosen. Thus *ball-flower* is said to be "An ornament like a ball enclosed within three or four petals of a flower, often inserted in a hollow moulding." This definition is copied almost word for word from the Glossary at the end of Gwilt's *Encyclopædia*; but there we read, after "hollow moulding," the important addition, "and is considered one of the chief characteristics of the Decorated period of Gothic architecture." This ought certainly not to have been omitted. *Flamboyant* is defined as "Characterized by waved lines of contrary flexure in flame-like forms (Gwilt): of the style prevalent in France in the fifteenth and first half of the sixteenth century." In amplification of this definition some such quotation as the following, from R. and J. A. Brandon's *Analysis of Gothick Architecture*, might well have been given: "In England this term is restricted to form or design in tracery; but on the Continent [to] . . . . the entire range of Gothick architecture at a period commencing with the decline of Decorated Gothick in England." *Flèche* is defined as "A slender spire, especially one placed over the intersection of the nave and transept." As this word is a comparatively recent importation from France it might not have been out of place to have given Viollet le Duc's definition in the *Dictionnaire de l'Architecture Française*: "Ne s'emploie habituellement que pour désigner des clochers de charpenterie recouverts de plomb ou d'ardoise, se terminant en pyramide aiguë." One notes that the earliest quotation given of the use of *Gargoyle* is dated 13—. The earliest

* Members will have seen from the lists of "Additions to the Library" which appear from time to time that through the generosity of Mr. B. Ingelow [*F.*] the Institute has received regularly from the commencement a copy of each part of the Dictionary as soon as published.

quotation given in the Architectural Publication Society's *Dictionary* is dated definitely 1365. A *casement* is defined as "A hollow moulding, a *cavetto*, not exceeding a quarter round." This would have been more correct if the last clause had been omitted; and the following from F. A. Paley's *Manual of Gothic Moldings* might well have found a place among the illustrative quotations: "It is generally a mark of early Perpendicular work when the casement is deep and narrow, of late when wide and shallow, and of debased when it is so stretched as to become almost or quite a flat surface, sunken but little below the chamfer plane."

But in spite of such omissions as these, which are perhaps so unimportant as to be hardly worth mentioning, one feels that the more one consults the pages of this great work the more one can endorse the words of Dr. J. A. H. Murray, who, in his Romanes lecture on "The Evolution of English Lexicography," given before the University of Oxford in 1900, said: "The structure now reared will have to be added to, continued, and extended with time; but it will remain, it is believed, the great body of fact on which all future work will be built. It is never possible to forecast the needs and notions of those who shall come after us; but with our present knowledge it is not easy to conceive what new feature can now be added to English lexicography. At any rate, it can be maintained that in the Oxford Dictionary, permeated as it is through and through with the scientific method of the century, lexicography has for the present reached its supreme development."

Erdington. BENJAMIN WALKER.

WILLIAM EDEN NESFIELD.

WILLIAM EDEN NESFIELD, architect, eldest son of William Andrews Nesfield, one of the earliest members of the Society of Painters in Water-colours, was born at Bath on the 2nd April 1835.

His father, who was the son of the Rev. William Nesfield, rector of Brancepath and Chester-le-Street, Durham, and travelling tutor to Mr. Lambton, afterwards Earl of Durham, was educated at Winchester and Trinity College, Cambridge. He began his career in the Army, which he entered as a cadet at Woolwich in 1809. Being ordered to the Peninsula with the 95th Regiment (now the Rifle Brigade), he took part with Wellington's army in the fighting in the north of Spain until the capture of St. Jean de Luz in 1813. At the conclusion of the Peninsular War he was stationed in Canada, where he acted as aide-de-camp to Sir Gordon Drummond, and was engaged at the siege of Fort Erie and the defence of Chippeway. Retiring from the Army in 1815 on half-pay, Lieutenant Nesfield resumed the practice of painting, and was elected an Associate-Exhibitor of the Society of Painters in Water Colours in 1823, with Essex, Finch, Gastineau, S. Jackson, and others, and the next year he was elected a member of the Society, and was thenceforth one of its most constant contributors, his early subjects being chiefly Italian or Swiss landscapes. Later in life Mr. Nesfield turned his attention to landscape gardening, and laid out the grounds of a number of noblemen's seats in different parts of the country. He designed the Horticultural Gardens at South Kensington, and remodelled portions of Kew Gardens, St. James's Park, and Regent's Park. He died on the 2nd March 1881, in his 88th year. There is a drawing of Bamborough Castle by the elder Nesfield in the Ellison Gift Collection at South Kensington. A drawing of the Falls of the Tummel by him was sold by Messrs. Christie & Manson at the sale of Mr. Leaf's pictures in 1875 for 310 guineas, and again at the sale of the Leith Collection, 11th May 1891, for 150 guineas, when another drawing of the Ture of Killarney, from the Threlfall Collection, realised 140 guineas.

Ruskin, in *Modern Painters*, speaks in the highest terms of the elder Nesfield's work, and in the chapter On Water as painted by the Moderns (i. p. 349) declares that "Nesfield has given us every character of the radiant cataract"; and speaking of Ruysdael (*Modern Painters*, i. 344) says: "Probably you will not be much disposed to think of any mortal work at the time; but when you look back to what you have seen, and are inclined to compare it with art, you will remember, or you ought to remember, Nesfield. He has shown extraordinary feeling, both for the colour and the spirituality of a great waterfall; exquisitely delicate in his management of the changeful veil of spray or mist, just in his curves and contours, and rich in colour. If he would remember that in all such scenes there is much gloom as well as much splendour, and relieve the lustre of his attractive passages of colour with more definite and prevalent greys, and give a little more substance to parts of his picture unaffected by spray, his work would be very nearly perfect. His seas are also most instructive, a little confused in chiaroscuro, but refined in form and admirable in colour."

William Eden Nesfield was educated at Eton, and entered the College in 1847, when in his twelfth year, in the Lower School, third form. He is described in Stapylton's List of Eton College as "an architect; author of a book on Italian architecture" (such is fame!); "eldest son of the eminent landscape gardener." Nesfield's two brothers, Arthur Markham and David William, were also educated at Eton College, where they entered in 1856 and 1859 respectively. Arthur

Markham Nesfield, who was a pupil of his father, superintended the laying out of the Long Walk and garden in Regent's Park designed by his father, and designed and superintended the laying out of Ramsgate Cemetery, and Fetcham Park, Leatherhead. He was thrown from his horse and killed in 1873.

William Eden Nesfield was the lowest boy in the school at his entrance. He remained at Eton four years, and was then sent to a tutor at Berne in Switzerland. When about sixteen he entered the office of Mr. William Burn, of Stratton Street; but finding Mr. Burn's practice uncongenial to his taste, he went into the office of his uncle, Anthony Salvin, Sen., in Argyll Street. Nesfield is said to have entered the Royal Academy in the Architectural School, and to have gained the Academy Travelling Studentship, but this is denied. On attaining his majority he inherited a legacy of £300, left him when a child by his godfather, Sir William Eden, and with this money he travelled for some time in France and Italy, and visited Athens, Constantinople, Mount Athos, and Salonica in company with James S. Donaldson, the youngest son of Professor Donaldson, during the years 1857–58. During his residence in Rome he sat for his portrait to Edouard Brandon, a distinguished French artist, who was then engaged on the frescoes in the Oratory of St. Brigitte. This portrait is now in the National Portrait Gallery (No. 1193, Room XVII.), to which it was presented by the present writer, who received it from Nesfield's widow as a memento of her husband, who was his travelling companion in Italy.

Soon after his return to England, in 1858, Nesfield commenced practice in Bedford Row, and set to work on his book, *Specimens of Mediæval Architecture, chiefly selected from Examples of the Twelfth and Thirteenth Centuries*, which was published in parts, and was completed in March 1862. To this work his friend Albert Moore contributed a drawing for the lower portion of the title-page, the rest of the design being drawn by Nesfield himself.

Nesfield was elected an Associate of the R.I.B.A. in 1861, a year after his friend and partner, Mr. Norman Shaw, who was elected in 1860, and retired from the Institute at the same time as Mr. Shaw in 1867.

One of Nesfield's earliest works was a new wing to Coombe Abbey, near Coventry, for the Earl of Craven, commenced in 1861, of which he exhibited a drawing in the Royal Academy Exhibition, 1862, which attracted much attention. In after years he regretted that he had destroyed an interesting eighteenth-century building to make room for this addition. The greater part of the lower portion is Early Norman work; the east wing, bridge over the moat, and offices are new. The additions are partly Early English and partly fifteenth century, and are built of native red and white sandstone and English oak. The estimated cost of the work was £58,000, but this is believed to have been exceeded.

Another large work was Cloverley Hall, Whitchurch, Shropshire, for Mr. J. Pemberton Heywood (1862–70), late sixteenth century, which cost £60,000, exclusive of decoration. There is a drawing of the garden front by Nesfield in Eastlake's *History of the Gothic Revival* (p. 339). The peculiarity of this design is that although founded on a French model it is distinctly English in character, and could not be mistaken for anything but what it is—an English gentleman's country house.

> Cloverley Hall, says Mr. Eastlake (*Hist. Gothic Revival*, p. 340), is erected on a wooded slope overlooking a lake in one of the most picturesque parts of Shropshire. The nature of the site made it essentially a hill-side house, and thus involved an uneven distribution of floor levels in its internal arrangement. Under ordinary circumstances this condition of things naturally results in an irregularity of elevation more compatible with artistic effect than domestic convenience; but by the ingenious planning of the staircases and a judicious arrangement of the rooms *en suite* this difficulty has been overcome and the peculiarity of the site is scarcely noticeable. The main entrance to the house is from a courtyard on the upper level: it consists of a spacious vestibule panelled throughout in oak. Thence access is obtained under the music gallery to the great hall, which is about 55 feet long and 28 feet high. The general plan of the hall, with its ample fireplace and large bay window, is not unlike that adopted in the old manor house Ockwells, in Berkshire. . . . Externally the house possesses, in addition to the general picturesqueness of its composition, many distinctive characteristics of construction and design. The bricks of which the main masses of the walls are built were manufactured expressly for the building on the estate, and are far thinner than is usual. They are laid with a thick mortar joint resembling the style of work in old houses of Henry VIII. The parapets (about 3 feet high) are of wood covered with lead, which is beaten outwards at intervals in the form of large rose-shaped ornaments quaintly intersecting each other. [These were called by Nesfield "pies;" they may be seen also on the parapet in front of the bank at Saffron Walden, Essex.] Above this parapet on the main front rise lofty dormers, bearing in their gables sculptured representations of the seasons, carved by Forsyth from designs by Albert Moore. The effect of these figures, which are about two-thirds life size, and executed in very low relief, is very striking.

In 1862 Nesfield designed and carried out a dairy farm, cottages, and shops at the entrance to Sefton Park, Liverpool, for the Earl of Sefton. The dairy is a handsome work, with mosaic panels on the walls and a fine fountain. The Crown Princess of Prussia, afterwards the Empress Frederick, was so pleased with the dairy that she commissioned a replica of it for her palace at Potsdam, which was carried out in the following year.

The Lodge at the end of the Long Walk, Regent's Park, for Mr. Cowper-Temple, afterwards Lord Mount Temple, First Commissioner of Works and Buildings (1860–66), erected 1864, is a good specimen of Nesfield's skill in design, and was a

great favourite with its author. It has been sadly mutilated by successive First Commissioners, the external woodwork having been painted.

In 1860–61 Nesfield erected at Shipley Hall, near Derby, for Mr. A. N. Mundy, an ornamental farm and dairy; several lodges and cottages are included in the design. The ceiling of the dairy was decorated by Albert Moore.

Kinmel Park, Abergele, North Wales, for Mr. H. R. Hughes, begun in 1865, is an enormous building in the Classic style, and is illustrated in the *Architect*, July 17th 1891, and the lodge in the *Architectural Review*, vol. i. p. 241, from photographs.

Kinmel (says Mr. Brydon) is quite without a rival for the artistic power and knowledge it displays, for the dignity of its treatment, and the refinement of its detail. Like all he did, it is the work of a true artist, and is carried out with a thoroughness and vigour which were all his own.

Plas Dinam, Llandinam, Montgomeryshire, erected in 1872 for Captain Crewe Read, R.N., illustrated in the *Architectural Review* (vol. iv. pp. 62, 63), is one of Nesfield's most successful country houses, and was thus described by Mr. Stuart Rendel, now Lord Rendel:—

Plas Dinam was designed and built for Captain Crewe Read, R.N., and he was so fortunate as to place himself wholly in Mr. Nesfield's hands from choice of site down to china and furniture. Captain Read told me that in regard to outlay his confidence was singularly justified, and that the house was built within the architect's estimate, and the contract carried through without extras.

The house is singularly attractive in elevation from all points of view, and not less novel in treatment than suitable to its position and the surrounding scenery. There is fine artistic feeling in every detail of it inside and out, yet with great reserve, simplicity, and breadth; but it is perhaps the plan and disposition of the accommodation which command most attention and praise. Family, guests, and servants during my residence in it were always unanimous in the opinion that it was, for its size and character, faultless in arrangement and comfort. I venture to affirm that Plas Dinam will prove that an architect of these days harmoniously and thoroughly displayed the union of three qualities hardly ever found together—marked originality in art, plain common sense in all practical matters, and scrupulous care and exactitude in business and money questions.

I confess that I think that in him the country lost the ablest of the valuable band of authors of the revived school of domestic architecture.

Plas Dinam (says Mr. Brydon in an article in the *Architectural Review*, vol. iv. p. 62) is a moderate-sized house in Mr. Nesfield's most characteristic manner. Built of stone, with the upper portion of the walls covered with grey-green slates, tall red-brick chimneys, half-timbered gables, and many mullioned windows, we have here all the features he used with such artistic skill and felicity, but which, though familiar, never seem to lose their attractiveness in such capable hands.

In plan the house bears a striking resemblance to Loughton Hall (illustrated, vol. i. p. 293), or, rather, it should be said Loughton Hall resembles Plas Dinam, for the latter was built in 1872, and therefore some six years previous to the former. The entrance, the great hall, the public rooms, and the offices have exactly the same relation to each other in both houses, so much so indeed that at first sight they appear to be the same or, at all events, studies for the same house; but when the details come to be looked into, there are many and noticeable differences; for example, the somewhat awkward disposition of the steps in the entrance hall and the principal staircase at Loughton is a departure, and hardly for the better, from the superior arrangement at Plas Dinam. The owner's private room also in the latter is more *en suite* with the great hall and the public rooms, and has thus a much better approach. Still after making every allowance, it is a curious instance of an architect repeating what is substantially the same plan on two quite separate sites, and with entirely different materials. The outward and visible expression of this sameness in plan, however, is altogether another matter. Loughton is a brick house, Plas Dinam essentially a stone one; moreover, the two are entirely different in style and architectural treatment—as great a contrast in this respect as their plans are in correspondence. Plas Dinam is architecturally of much the same type as Lea Wood (illustrated, vol. i. p. 295), but larger and more important, and preceded the latter by about two years. The same mediæval treatment prevails throughout; the external treatment of such features as the entrance gable, the bay windows, and the chimney stacks is very similar. In this respect it is an interesting study of the working of the architect's mind, taken into conjunction with the later houses just mentioned, and the results as affected by the nature of the requirements, the sites, and the materials of which they are built. In fact, Plas Dinam seems to have given the letter of its plan to Loughton Hall, and the spirit of its elevations to Lea Wood. With regard to materials, a noticeable incident is the employment of grey-green slates for the roofs and the upper portions of the walls, instead of the usual red weather tiling. The warm colour of the stone, the greenish-grey of the slates, and the red of the chimney-stacks, give quite a different scheme of colour from most of Mr. Nesfield's houses.

In 1887 Nesfield married Mary Annetta Gwilt, the eldest daughter of John Sebastian Gwilt and granddaughter of Joseph Gwilt, to whom he bequeathed the whole of his property, amounting to some £25,000.

Towards the close of his life Nesfield relinquished business and retired to Brighton, where he died on the 25th March 1888, within a few days of completing his fifty-third year.

The *Athenæum*, in an obituary notice, credits Nesfield with the authorship of several papers on architecture and archæology, but this does not appear to have been the case. He had no taste for literature, and the only contribution known to have been made by him to the Press is a memoir of his uncle, Anthony Salvin, in the *Building News*, 17th December 1888, signed with his initials.

Nesfield had a great dislike to publicity, and avoided what he called advertising, or calling attention to himself in any way, and would never permit illustrations of his works in the professional journals. He had besides an imperfect sympathy with conventional society, but was a most agreeable companion, and numbered some of the most eminent men in literature and art among his friends; the gatherings at his rooms at Argyll Street, and his excursions with the Fabs were memorable events.

Among his strongest characteristics were his singular uprightness and a sturdy independence in his bearing towards his clients. He could never be persuaded that he was the servant of an employer, and treated him in something of the same manner that Michelangelo assumed to Pope Julius—as a friend and patron and nothing more. He was quick to uphold the honour of his profession, "to keep his shield bright," as he expressed it; and for this, if for nothing more, those who survive him should hold his memory in grateful remembrance.

LIST OF SOME OF THE WORKS OF THE LATE WILLIAM EDEN NESFIELD.*

1860. Cross at West Derby.
1861. New Wing to Coombe Abbey, Warwickshire: for the Earl of Craven.
„ Holbrook Lodge, Ipswich: for John Berners, Esq., of Woolverstone Park.
„ Entrance Lodge, Lodge Gates, at Bradfield Hall, Bury St. Edmunds: for Arthur J. Young, Esq.
„ Boat House, Pavilion, Terrace Seats, Clumber: for the Duke of Newcastle.
1862. Dairy Farm Cottages and Shops at Liverpool; entrance Croxteth Park, Liverpool: for Lord Sefton.
„ Sundial, Pavement, Flower Basin: for John Malcolm, Esq., Callore, Mor, N.B.
„ Farm House, Lodge, Labourers' Cottages, and new Porch to Hall: for A. Mundy, Esq., Shipley Hall, near Derby.
„ Two Lodges, Kirklington, Oxon.: for Sir H. Dashwood.
„ Pavilion and Iron Gates, Swillington: Sir John Lowther.
1863. Welcombe Mansion, near Stratford-on-Avon: for Mark Phillips, Esq., of Snitterfield Hall, Warwickshire.
„ Sproughton Manor: Lieut.-Colonel Phillips.
1863 & 1875. Laundry Buildings, Summer House and Lodge: for Mme. Van de Weyer.
1863. Terrace, Walls, Steps, Fountain Basins: for the Royal Horticultural Society's Gardens, South Kensington.
„ Dairy at Potsdam, similar to that at Croxteth Park. For the Empress Frederick.
„ Bank at Saffron Walden, Essex.
1864. New Lodge, Regent's Park.
„ Conservatories and Ferneries: Viscountess Holmsdale, Linton Park, Kent.
1865. Kinmel Park, Abergele, N.W.: H. R. Hughes, Esq.
„ Monument for Sir John Shelley of Avington.
„ Cloverley Hall, Shropshire: J. Pemberton Heywood, Esq.
„ Weston Lodge, Barthomley Lodge, Farm House, Cottages, Station-master's House: for Lord Crewe, Crewe Hall, Staffordshire.
1866. Lodge, Kew Gardens.
1869. Bettws Church, New Town, North Wales.
1870. Clock Tower, Hampton-in-Arden, Cottages and Lodges.
1871. Alterations, 23, Chesham Place: Sir Frederick Peel.
„ Bank Hall, Chapel-en-le-Frith.
1871. Romsey Schools, Romsey, Hants.
1872. New Reading Room and Library for Colliers at New Battle Abbey: Marchioness of Lothian.
1872 to 1878. Entrance Lodge, Water Works, Fountain, Orangery, Library, Broadlands, Hants: Lord Mount-Temple.
1872. Rose and Crown Inn, Saffron Walden, Essex.
„ Plas Dinam, Llandinam, Montgomeryshire: Capt. Crewe Read.
„ Turnpike and Double Cottages: Marquess of Lothian.
1873. Bodrhyddan Rhyl, North Wales: extensive alterations for Captain Conwy Rowley Conwy.
„ Ingestre Monument, Ingestre Church, to the 18th Earl of Shrewsbury.
„ Tomb in Willesden Church to Mrs. H. Vallance.
1874. Loch Lineart Lodge, N.B.: Lady Ashburton.
„ Melchet Court, Romsey, Hants: Lady Ashburton.
„ Maesmaur Hall Farm House, North Wales.
„ Farnham Royal Church, Slough.
„ New Organ Chamber and alterations to Vestry, Holy Trinity Church, Paddington.
„ Lea Wood, near Matlock, Derby: W. Walker, Esq.
„ Corra Church (restoration), Whitchurch, Salop: John Pemberton Heywood, Esq.
„ Shops and Cottages, Radwinter, Essex.
1875. Plas Ucha Farm, on the Mostyn Estate, North Wales.
„ Newport Schools, Essex.
„ Houghton Church restoration, Norfolk: Henry Lee Warner.
„ Keplin Hall: extensive alterations, new Stables, Northallerton, Yorks: Admiral Carpenter.
1876. SS. Mary and Bartholomew, restoration, Hampton-in-Arden.
„ Cliff House, Babbicombe, Devon: Lord Mount-Temple.
„ Llandyrnog Church (restoration), Denbigh, North Wales: for Rector and Committee; Font in 1879 for Captain Mesham.
„ Bolton Church, Bolton-on-Swale, restoration; Organ, Reredos, Stained Glass Window.
„ Scorton Schools, Cattereck-on-Swale, Yorkshire: Christopher Craddock, Esq.
„ Memorial Chapel, Loughton, Essex; Loughton Parish Church (restoration), Essex; Loughton Hall, Essex: R. J. Whittaker Maitland, Esq.
„ Wygfair Hall, Denbigh, North Wales.
„ Gloddaeth, near Llandudno, North Wales: Lady Augusta Mostyn.
„ St. Margaret's Church, Wicken, Bishop Stortford, New Aisle, Vestry, Organ.
„ Ray Meadow Farm, Toddington: Lord Sudeley.
„ Sculpture at Toddington: Lord Sudeley.
„ Hampton-in-Arden mansion, extensive alterations, new Staircase and Garden Entrance, near Birmingham: Sir F. Peel.
1877. Double Cottages: Lord Mount-Temple.
„ Gwernyfed Park, Breconshire: T. Wood, Esq.
„ Cloverley Hall, Shropshire: John Pemberton Heywood (? 1865).
„ Corra Church Tower: in memory of John Pemberton Heywood, erected by his widow.
„ House at Greenock: for John Stewart, Esq.
Finished in 1877. Greynog Hall, Montgomery: Lord Sudeley.
„ Labourers' Cottages at Toddington: Lord Sudeley.
„ Falkbourne Hall, Witham, Essex.
1878. Alterations and additions, 7, Buckingham Palace Gate: Lord Sudeley.
„ Reredos, Walsingham Church, Norfolk.
„ Alterations and additions, 23, Grosvenor Square: A. P. Heywood Lonsdale, Esq.

* This list was compiled from account-books by Mrs. Nesfield after the death of her husband. Absolute accuracy is not claimed for it, and the dates in some instances may be earlier or later.

1879. House at Westcombe Park, Greenwich: F. Garrard, Esq.
,, Memorial Cross at Manchester: T. Armstrong, Esq.
,, Hutton Bonville Hall, Northallerton, Yorks: T. R. W. Hilyard, Esq.
1880. Memorial Brass, Eton College Chapel, Durnford.
1881. House at West Auchmade, Greenock: T. R. Lamont, Esq.

There are many works of alteration, additions, &c.
5, Aubrey Road, Notting Hill.
Dr. Whistler's House.
House for H. Vallance at Farnham Royal.
Monuments to Lady Peel, Lady Geary, Earl Craven's son, and others.
Also gas-works at Gwernyfed, Kinmel, and other places.

JOHN HEBB.

OBSTRUCTION TO LIGHT [p. 369].

From Mr. H. PHILLIPS FLETCHER [*F.*]—

I note in the current number of the R.I.B.A. JOURNAL a letter from Mr. Molesworth, in which the shaft of criticism appears to have taken so true a flight that he must needs descend to something akin to personalities.

One would think, if the author possessed practical experience in matters relating to easements of light and air, that he would hardly find the first paragraph of the review too involved for him to comprehend.

With regard to the Pole Star, it revolves round the Pole at a uniform distance of 1° 16′, so that the total alteration in altitude is never more than 2° 32′. A distinguished naval commander (whose letter I inclose) states in his letter that "the variation of the compass is frequently found by means of the Pole Star."

You will notice that the above-mentioned naval officer also writes in the same letter, "With regard to great-circle sailing it seems to me that spherical trigonometry is the simplest way."

The above passages seem to me to entirely dispose of Mr. Molesworth's "review of reviews"; and as he invokes naval opinion I have most willingly conformed to his procedure with regard to this portion of his book.

In the review in question it was also pointed out that—

(1) The deviation of the compass was incorrectly stated by over 4°.

(2) The example worked out referred to the latitude, approximately, of Turin and Sebastopol.

(3) No allowance was made by the author for the varying values of the angle of incidence of the sun's rays.

(4) That it was a necessary corollary of the author's work that if no sky is visible there will either be no light in a room, or that if there be any light it will be of no value.

(5) That the distance of the obstructive erection is not taken into account.

(6) The author does not deal with the best light one can obtain—namely, that from the north.

(7) That the part of the book relating to diffused light was published thirty-eight years ago by Professor Kerr.

And yet Mr. Molesworth objects that the review is not criticism!

MINUTES. XIV.

At the Fourteenth General Meeting of the Session 1902-1903, held Monday, 18th May 1903, at 8 p.m., the President, Mr. Aston Webb, A.R.A., F.S.A., in the Chair, with 19 Fellows (including 9 members of the Council), 26 Associates (including 1 member of the Council), 2 Hon. Associates, and several visitors, the Minutes of the Meeting held Monday, 4th May [p. 372], were taken as read and signed as correct.

Mr. David Morgan [*F.*], President of the Cardiff, South Wales, and Monmouthshire Society, attending for the first time since his election, was formally admitted by the President, and signed the Register.

On the motion of the President, a cordial vote of thanks was passed to Mr. E. J. May for his kindness in lending the Nesfield drawings for exhibition at the President's "At Home," and for the trouble he had taken in arranging them for members' inspection.

The following candidates for membership, found by the Council to be eligible and qualified according to the Charter and By-laws, were recommended for election, namely:—As FELLOWS, William Henry Atkin Berry [*A.* 1879]; Bernard William Hurt Brameld (Manchester); Walter James Burrows; Edward Guy Dawber [*A.* 1889]; Horace Field; James William Fisher (Wellingborough); John Gibbons (Manchester); Henry Jones Lanchester [*A.* 1874]; Hallam Carter Pegg [*A.* 1896]; Reginald Pope (Folkestone); Harry Redfern; Henry Whiteman Rising; Arthur Heron Ryan-Tenison [*A.* 1894]; Francis William Tasker [*A.* 1874]; William Henry White [*A.* 1887]. As ASSOCIATES, Cedric Heise Ballantyne (*Qualified* in Melbourne 1902) (Melbourne, Victoria); Edward Albert Jollye (*Qualified* 1888) (Wolverhampton); Arnott Woodroofe (*Probationer* 1896, *Student* 1898, *Qualified* in Canada 1902) (Vancouver, B.C.). As HONORARY ASSOCIATES, Alfred East, A.R.A.; Thomas Hayton Mawson (Windermere); Solomon Joseph Solomon, A.R.A. As HON. CORRESPONDING MEMBERS, Jean Louis Pascal, Member of the Institute of France, Paris; Heino Schmieden, Königl. Baurath, Ordentliches-Mitglied der Königl. Akademie der Bauwesens, Mitglied der Königl. Akademie der Künste, Berlin.

A Paper by Sir Martin Conway on THE BEGINNINGS OF THE EGYPTIAN STYLE OF ARCHITECTURE having been read by the author and illustrated by lantern slides, a discussion ensued, and a vote of thanks was passed to Sir Martin by acclamation.

The proceedings then closed, and the Meeting separated at 10 p.m.